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ABSTRACT

This document presents statistical data from the countries of France, Finland, the Netherlands, Japan, Italy, and Norway regarding the flows of graduates from higher education and their entry into the workforce. Among the statistical data presented are the trends and current situation in each country for such areas as college enrollments and graduation rates; statistics on numbers of graduates by levels of degrees and institutions; employment destinations by level and type of degree earned and by sex; numbers of graduates obtaining employment in specific industries and professions; job hunting data; and a variety of comparative data showing graduate employment trends by degree, sex, institution, and industry. Additionally described in some of the reports are the educational systems that exist within the reporting country, salary ranges achieved by graduates, and recruitment patterns. (GLR)

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VOLUME III: Finland, France, Italy, Japan, Netherlands, Norway.

DE L'ENSEIGNEMENT SUPÉRIEUR A L'EMPLOI

VOLUME III : Finlande, France, Italie, Japon, Norvège, Pays-Bas.

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AVANT-PROPOS

L'OCDE a conduit une activité intitulée "Enseignement supérieur et Emploi", qui comportait trois projets distincts : "Les sorties des enseignements supérieurs et les entrées dans la vie active" ; "Le cas des lettres et des sciences sociales" ; et "Les développements récents de la formation professionnelle continue".

Ce volume relève du premier de ces trois projets. De nombreux pays Membres ont préparé des contributions, à partir d'une note d'orientation détaillée rédigée par le Secrétariat. Ces contributions ont souvent exigé un important effort conceptuel pour rassembler des données d'origines très diverses. Elles reflètent l'état des connaissances dans chaque pays et, en même temps, des approches, des méthodologies et même des philosophies très différentes.

Les deux premiers volumes rassemblaient les contributions de l'Allemagne, de l'Australie, de l'Autriche, de la Belgique ; du Canada, du Danemark, de l'Espagne et des Etats-Unis. On présente dans ce troisième volume celles de la Finlande, de la France, de l'Italie, du Japon, de la Norvège et des Pays-Bas. Les contributions des autres pays seront présentées dans le volume suivant.

Il faut noter que ce projet met l'accent sur les flux plutôt que sur les catégories d'établissements ; on appelle "enseignements supérieurs" les formations suivies par ceux qui ont terminé des études secondaires ou de niveau équivalent. Ceci peut ne pas correspondre avec la définition plus restrictive qui en est donnée dans certains pays.

Ce projet a été conduit par Eric Esnault, du Secrétariat. Les idées exprimées par les auteurs n'engagent la responsabilité ni de l'OCDE, ni des autorités nationales intéressées. Ce volume est publié sous la responsabilité du Secrétaire général de l'OCDE.

FOREWORD

The OECD activity on Higher Education and Employment covers three discrete projects: "The flows of graduates from higher education and their entry into working life"; "The case of the humanities and the social sciences"; and "Recent developments in continuing professional education".

This report is devoted to the first of these three projects. Many Member countries submitted contributions in response to detailed guidelines prepared by the Secretariat. These contributions constitute a major conceptual effort to assemble information from many sources. They reflect the state of the art and illustrate a variety of approaches, methodologies and even philosophies.

The first two volumes contained contributions from Germany, Australia, Austria and Belgium; Canada, Denmark, Spain and the United States. Presented here are those from Finland, France, Italy, Japan, Norway and the Netherlands. Contributions from other countries will be presented in the succeeding volume.

It should be noted that the emphasis is on flows rather than institutions. "Higher education" is defined as the education and training experience of those who have completed upper secondary education or its equivalent. This may not coincide with the more restrictive connotation of the term in some countries.

This project was led by Eric Esnault, of the Secretariat. The views expressed by the authors do not commit either the OECD or the national authorities concerned. This volume is published on the responsibility of the OECD Secretary-General.

FINLANDE

FINLAND

Arja Haapakorpi

University of Helsinki

This contribution brings together the main data and findings
from a study on the employment of graduates in Finland.
The full report was published by the Ministry of Education in 1989
(in Finnish).

ACADEMIC GRADUATES IN THE FINNISH LABOUR MARKET

Arja Haapakorpi

This article presents data on the destinations of Finnish academic graduates in the labour market, with a focus on unemploment, on placement versus professional qualifications, and on income. The placement statistics are surveyed by field of study, level of degree, and sex. The material comes from the population census of 1985 taken by the Central Statistical Office, and the sample includes all academic graduates holding Master,Bachelor or Diploma-level degrees (1).

UNEMPLOYMENT

The employment rate of university graduates was good compared with the average figures in the country: in 1985 the overall unemployment rate was 6.3%, while only 1.1% of Master-level graduates and 1.5% of Bachelor or Diploma-level graduates were unemployed (2). The longer the degree course is, the better the graduate's prospects are in the labour market. Medical and teacher graduates rarely had difficulties in finding positions for which they were qualified; on the contrary, there is a slight shortage of physicians and teachers.

Young and newly graduated persons failed to obtain employment more often than all graduates on average, but this was only true in certain fields, namely the humanities, law, social sciences, psychology and natural sciences. There was no marked difference between men's and women's average unemployment rates. However, in a difficult employment situation women tend to be less employable than men. Regional statistics showed that in provinces with below-average employment rates women holding Master-level degrees had remained unemployed or had accepted inappropriate jobs more often than their male colleagues.

A problem that was worse than unemployment and one that was frequently faced by graduates entering the labour market was that their qualifications did not match the available vacancies. Another problem typical of academic graduates was repeated appointments with non-permanent tenure (3).

TABLE 1.

Uneployment rates of academic graduates by field and level of study, age and sex, as a percentage of the total labour
(employed and unemployed in absolute figures)

BACHELOR OR DIPLOMA-LEVEL DEGREE HOLDERS

Field of study, sex	Age					Unemployed N	Employed N
	-29	30-39	40-50	51-	Total		
All	1,8	1,6	1,1	1,5	1,5	726	48 325
Arts	3,1	2,9	1,5	0,8	2,4	251	10 609
Law	3,4	2,6	1,0	0,1	1,8	20	1 132
Social Sciences	1,1	2,3	1,0	0,5	1,7	45	2 598
Economics & Business Admin.	1,3	1,3	1,7	2,7	1,6	222	13 849
Psychology	-	1,8	1,5	0	2,0	7	352
Education	0,5	0,5	0,3	0	0,5	59	12 547
Sports Science	0	1,0	0	0,3	0,5	8	1 627
Natural Sciences	3,4	2,3	0,5	0,8	1,9	100	5 148
Men							
All	2,2	1,6	0,4	0,2	1,7	298	17 555
Arts	4,4	3,7	1,9	0,4	2,9	57	1 948
Law	2,4	4,3	2,7	0,2	3,0	12	391
Social Sciences	1,6	5,0	1,8	2,0	3,8	21	560
Economics & Business Admin.	2,4	1,3	2,1	3,0	1,9	136	7 126
Education	0,2	0,3	0,3	0	0,3	11	3 793
Natural Sciences	3,6	2,5	0,3	0,1	2,0	57	2 867
Women							
All	1,7	1,5	1,0	0,9	1,4	28	30 770
Arts	2,9	2,7	1,4	0,1	2,2	194	8 661
Law	4,3	1,8	0,4	0	1,1	8	741
Social Sciences	1,1	1,5	0,8	0	1,2	24	2 038
Economics & Business Admin.	0,6	1,2	1,3	0,2	1,3	86	6 723
Education	0,6	0,7	0,3	0	0,5	48	8 754
Natural Sciences	3,0	2,1	0,8	0	1,9	43	2 281

MASTER-LEVEL DEGREE HOLDERS

Field of study, sex	Age -29	30-39	Total	Unemployed N	Employed N
All	1,9	1,1	1,1	1 099	95 321
Arts	4,4	1,8	1,3	156	11 834
Theology	1,0	0,6	0,6	16	2 895
Law	3,7	2,0	1,7	139	8 257
Social Sciences	2,9	1,6	1,5	16	9 794
Economics & Business Admin.	1,3	0,9	1,1	68	4 466
Psychology	4,4	1,2	1,3	31	2 437
Education	0,5	1,0	0,8	31	3 884
Sports Science	-	-	0,5	2 390	
Natural Sciences	3,6	1,8	1,7	181	10 433
Technical Sciences	1,3	0,9	1,1	221	19 951
Agriculture & Forestry	1,6	1,0	1,1	51	4 525
Medicine	0,8	0,2	0,3	28	8 681
Dentistry	2,1	0,1	0,6	21	3 751
Veterinary Medicine	-	-	0,2	2	718
Pharmacy	1,3	2,4	1,3	16	1 235
Men					
All	1,6	0,9	1,0	585	56 789
Arts	4,6	1,9	1,4	41	2 839
Theology	-	-	0,2	4	1 849
Law	3,7	1,2	1,3	77	6 112
Social Sciences	2,7	1,8	1,6	97	5 929
Economics & Business Admin.	1,2	0,9	0,9	33	3 730
Psychology	-	-	1,5	9	614
Education	-	-	0,5	6	1 180
Natural Sciences	3,6	1,1	1,4	86	6 253
Technical Sciences	1,2	0,7	1,0	185	17 851
Agriculture & Forestry	1,1	0,3	0,9	26	3 309
Medicine	0,4	0,2	0,2	10	5 112
Dentistry	-	-	0,3	4	1 241
Pharmacy	-	-	1,0	4	397
Women					
All	2,1	1,6	1,4	524	38 532
Arts	4,3	1,7	1,3	115	8 995
Theology	1,8	1,7	1,1	12	1 046
Law	3,6	3,7	2,9	62	2 145
Social Sciences	3,1	1,2	1,3	49	3 865
Economics & Business Admin.	1,5	0,8	1,2	35	2 736
Psychology	3,6	1,2	1,2	22	1 823
Education	0,5	1,1	0,9	25	2 704
Natural Sciences	3,6	2,6	2,3	95	4 180
Technical Sciences	1,8	1,8	1,0	36	2 100
Agriculture & Forestry	2,5	2,0	1,7	25	1 486
Medicine	1,2	0,2	0,5	18	3 569
Dentistry	2,6	0	0,7	17	2 510
Pharmacy	1,6	2,8	1,4	12	838

PLACEMENT VERSUS QUALIFICATIONS

A high percentage of academic graduates, particularly of Master-level degree holders, aim at specific professional careers. Access to many professions is conditional on certain formal criteria, usually academic degrees. The contents of degree courses naturally have great relevance, but of primary importance is often the qualifying degree itself. It secures access to an exclusive professional group which enjoys a strong position in the labour market and is safeguarded against competition by other groups. The entry qualifications for professions vary. A specific academic degree is necessary in order to practise as a physician, lawyer, psychologist or clergyman, but among social workers the situation is different; some of them may have no degree at all, some may have graduated in social sciences and some in other fields of study.

The number of academic graduates has risen steeply during the last decades, but the increase in the number of vacancies for senior officials has slowed down since the early 1980's (4). Consequently, a number of academic graduates, usually with a general-education type degree and especially those with Bachelor- or Diploma-level qualifications, compete for the same posts (e.g. secretarial ones) as those who come from post-comprehensive vocational institutes. Since the number of academic graduates exceeds the number of available posts, employers are inclined in practice to tighten up their qualification requirements (5). An academic degree comes to be required for jobs for which vocational institutes used to provide sufficient training. On the other hand, employers may regard university graduates as over-qualified for routine work, and academic recruits themselves may become frustrated in jobs where their education is not needed at all.

Most of the non-professional jobs taken by academic graduates were in the administration of commercial enterprises and organizations. A relatively high number of graduates in law, business administration, technical sciences, agriculture, forestry and social sciences (Master-level) belonged to this group. Other non-professional posts included here were ADP managers and planners, editors and PR officers, and sales and advertisement managers. Those engaged in ADP work had usually graduated in technical or social sciences (Master-level), economics & business administration or natural sciences (often at Bachelor or Diploma-level). Editors, PR officers, librarians, archivists and museum curators had mostly been educated in arts or social sciences, while the majority of those who were engaged in statistical or financial research and planning had studied social sciences, economics & business administration or natural sciences. Sales and advertisement managers had most commonly graduated in economics & business administration or technical sciences. Secretarial posts were also commonly held by women who had a Bachelor- or Diploma-level degree in law or business administration.

The range of jobs available to Master-level graduates was wider than that to Bachelor or Diploma-level graduates. Not only does a Master-level degree open up a more varied choice, but it is also a requirement for many positions in the public sector. Master-level graduates are assigned to research, planning and administration more often than Bachelor-level graduates. Master's degrees include the writing of a thesis, which develops the candidate's competence for research and planning.

The rank of academic graduates' destinations in the labour market depended on the field and level of study. The more directly vocational the degree course had been, the easier it was for the candidate to be appointed to a senior official's post. Medical and teacher graduates had no difficulties in being recruited for positions they aimed at, while those whose education was non-vocational or otherwise of a more general nature, especially if it was in social sciences or business administration, had to accept junior clerical or other jobs more frequently than the average. On the other hand, several holders of Master-level degrees in these fields were also employed in high-ranking and high-salaried posts, such as managerial ones. The combinations of subjects within degree programmes also proved relevant to job placement. The more professional training the major subject provided, the easier it was for the graduate to find a post matching his qualifications. For example, 11% of all Master-level graduates had taken junior clerical or manual posts,while only 5% of Masters in social sciences who had majored in communication had done so.

On the whole, Master-level graduates were more successful in the recruitment market than the holders of lower degrees, who had settled much more frequently for junior clerical and other posts. An exception to this were teacher education graduates, who even with lower degrees had managed to obtain work which matched well with their qualifications. An average of 7% of Master graduates and 18% of Bachelor and Diploma graduates were recorded as holding junior positions.

Male holders of lower degrees in economics & business administration had been as successful as Master graduates at obtaining professionally appropriate employment. For women a Master's degree in business administration often secured a better placement than a Bachelor or Diploma level degree: about 47% of female holders of lower degrees and 22% of those holding higher ones had accepted junior clerical or manual jobs. It seems that in business the extent and level of the degree does not have the same relevance to men as to women.

Newly graduated persons tend to be less successful at job hunting than all graduates on average. Their unemployment rate was above-average, and many of them had had to settle for jobs which did not match their expectations. An average of 7% of all Mas-

TABLE 2.

Academic graduates by level of degree, sex and employer sector

Level of degree, sex	Employer sector						
	State	Local admin.	Private	Self-employed	Other	Total %	N
Master							
Total	22	32	40	6	0	100	94 212
Men	22	23	49	6	0	100	56 204
Women	20	46	27	5	1	100	38 008
Bachelor/ Diploma							
Total	10	46	41	3	0	100	47 599
Men	11	36	49	4	0	100	17 257
Women	10	51	36	2	1	100	30 342

ter graduates had accepted junior clerical or other positions, while the corresponding figure for newly graduated Masters was 17%. Those with medical or teaching degrees were again an exception; they had no difficulties in finding aspired positions even immediately after graduation.

The labour market is partly differentiated by sex. Male professions are primarily associated with the society's management, planning and control mechanisms and the production of material commodities, while female professions secure and maintain the basic material prerequisites of livelihood and of mental and physical development (6). Sex differentiation is more marked on the lower levels of education. Most of the recorded differences in men's and women's professional placement naturally result from the sex differentiation that already affects the selection of a field of study, but the labour markets of male and female graduates with the same education were also somewhat different.

Men had secured posts in managerial ranks more often than women had; quite a number of male graduates in law, economics & business administration, technical sciences, agriculture, forestry and social sciences were recruited for administrative jobs in enterprises and organizations. Women were appointed to this type of job relatively frequently (20%) only if they held degrees in economics & business administration. More women than men worked as teachers, and women were more often employed by local administration but men by the private sector, which is also shown by a survey by field of study.

The differences between the destinations of male and female graduates were reduced by vocational education; there was, for example, hardly any sex-based differentiation in the job placements of medical or teacher education graduates. It seems that labour markets which rely on credentials might help to equalize the opportunities available to men and women. The sex-based differences were most marked in the fields providing general-type education, in social sciences and in business administration. An academic degree of a general-education type leaves more margin on the labour market for men than for women; if the course contents of candidate's degree are not of primary relevance, other features such as sex will be decisive in the selection of new employees.

Men reached higher positions in the labour market than women. Of male Master-level graduates 6% had settled for junior clerical or manual jobs, while the corresponding percentage for their female peers was 15%. However, education providing professional qualifications improved female graduates' opportunities in the labour market. And vice versa, women's inferior destinations, in terms of professional appropriateness, were commonest within those fields where the degree did not directly qualify the graduate for any specific job. Female graduates in business administration and social sciences were placed in junior positions more frequently than men, but women holding degrees in medicine, pharmacy and teacher education obtained jobs matching their qualifications.

INCOME

The median annual income of Master-level graduates' ranged from 120,000 to 160,000 FIM, men's from 120,000 to 160,000 and women's from 96,000 to 107,000 FIM. The corresponding figures for Bachelor-level candidates were 84,000-95,000 FIM (all), 107,000-119,000 (men) and 84,000-95,000 (women). The annual income of the whole population for the same period averaged 67,000, men's 78,000 and women's 54,000 FIM.

The highest income figures were recorded for Licentiates in medicine and veterinary medicine. Graduates in dentistry, technical sciences, law, and economics & business administration also reached above the average; below-average income was earned by graduates in arts, theology, social sciences, psychology, education and sports science. Among the holders of lower degrees, men who had studied economics & business administration received the largest incomes, and those with lower degrees in sport and natural sciences were also above the average.

Surveyed by field of study, Master-level graduates earned more than Bachelor or Diploma-level graduates. Among younger people the differences were relatively small, probably because Masters need more time to graduate and also have fewer years of work experience behind them than Bachelor or Diploma-level graduates of an equal age. The income differences between higher and lower-degree holders began to increase from the age of 30.

Among young male graduates in economics & business administration, Bachelors initially earned more than Masters, and the income differences began to grow to the advantage of Master graduates only after the age of 40.

In the fields of law and social sciences, a Master's degree guaranteed a markedly higher income than a Bachelor's degree or a Diploma. For high-salaried lawyer professions, a Master's degree is a necessary qualification. As regards social sciences, Diploma holders much more often than Master graduates were employed in low-salaried social work, which pulled down he overall income level of lower-degree holders. The jobs of Master graduates in social sciences were much more varied; many of them worked in planning, research and administration.

Surveyed by profession, the annual income of academic graduates varied largely in the same way as by field and level of study. Graduates in technical sciences engaged in the administration of companies and organizations, for example, were paid a higher income than graduates in social sciences engaged in the same kind of work. In addition, Masters of Arts working as secretaries were paid more than Bachelor graduate secretaries. However, in economics & business administration this did not hold: Bachelors and Diploma holders other than teachers earned higher salaries than Masters. This was at least partly due to the age structure. The lower-degree holders were notably older than Master graduates, and income rises with age.

The lowest income figures were normally recorded for those working in the most junior positions, but their earnings were related to their fields of study. So, for example, the income of technicians holding a Master's degree in engineering exceeded the average income of Masters in social sciences.

The income level of many academic professions in the public sector is remarkably low.

Social science graduates who were engaged in social work and natural or technical science graduates who worked as university teachers earned even less than their peers who had accepted junior clerical or other jobs. In some cases it is economically more profitable for an academic graduate to choose a non-academic career. The range of earnings in junior posts was wide, even if the average income level was low.

Women's median annual income was lower than men's, and the difference became more marked with age. A comparison between fields of study showed the differences to be smallest among those qualified for basic community services. The salaries paid by local government, for example, to medical doctors and teachers are regulated, which evens out the sex-based income differences. The salaries paid within the private sector are free from regulation. For women it may be more profitable to serve the local government than the private sector. The data showed that female Master-level graduates in arts, business administration and science earned the best income in local government service and their male colleagues in the private sector.

The most marked differences between men's and women's income levels were recorded among graduates in law, social sciences and business administration (7). This was because the professional destinations of men and women were very different: men had entered high-salaried professions in the private sector, such as the administrative posts of commercial enterprises and organizations, and women were much more often engaged in local administration with low salaries, for example in secretarial or social work.

TABLE 3.

The median annual income of academic graduates by sex, field and level of study, and age group

Field and sex	Level of degree, age, median annual income (in 1000 FIM)					
	Bachelor/Diploma-level			Master-level		
	Age			Age		
	-29	30-39	40-49	-29	30-39	40-49
All	60-71	84-95	96-107	84-95	108-119	120-160
Men	72-83	96-107	120-160	84-95	120-160	160<
Women	60-71	72-83	96-107	72-83	96-107	120-160
Arts	60-71	72-83	96-107	60-71	96-107	120-160
Men	60-71	96-107	108-119	60-71	96-107	120-160
Theology			72-83	96-107	108-119	
Men			84-95	96-107	120-160	
Women			60-71	84-95	108-119	
Law	60-71	72-83	96-107	72-83	120-160	160<
Men	60-71	84-95	120-160	96-107	120-160	160<
Women	>60	72-83	84-95	72-83	96-107	120-160
Social Sciences	60-71	60-71	72-83	72-83	96-107	120-160
Men	72-83	84-95	108-119	72-83	108-119	120-160
Women	60-71	60-71	72-83	60-71	84-95	96-107

Field and sex	Level of degree, age, median annual income (in 1000 FIM)					
	Bachelor/Diploma-level			Master-level		
	Age			Age		
	-29	30-39	40-49	-29	30-39	40-49
Business Admin.	84-95	108-119	120-160	84-95	120-160	160<
Men	108-119	120-160	120-160	96-107	120-160	160<
Women	72-83	84-95	96-107	72-83	96-107	120-160
Psychology		60-71	84-95	60-71	84-95	96-107
Men				60-71	96-107	120-160
Women				60-71	84-95	96-107
Education	72-83	84-95	96-107	72-83	84-95	108-119
Men	84-95	96-107	108-119	72-83	96-107	120-160
Women	72-83	72-83	96-107	60-71	72-83	108-119
Sports Science	72-83	96-107	108-119	72-83	96-107	120-160
Men		96-107	120-160			
Women		84-95	96-107			
Natural Sciences	60-71	96-107	108-119	72-83	108-119	120-160
Men	60-71	96-107	120-160	72-83	108-119	120-160
Women	>60	84-95	96-107	60-71	96-107	108-119
Technical Sciences				96-107	120-160	160<
Men				96-107	120-160	160<
Women				84-95	108-119	120-160
Agriculture & Forestry				84-95	108-119	120-160
Men				84-95	120-160	120-160
Women				72-83	84-95	96-107
Medicine				120-160	160<	160<
Men				120-160	160<	160<
Women				120-160	120-160	160<
Dentistry				108-119	120-160	120-160
Men				120-160	160<	160<
Women				108-119	120-160	120-160
Veterinary Medicine				108-119	160<	160<
Men						
Women						
Pharmacy				84-95	96-107	120-160
Men					120-160	160<
Women					96-107	120-160

NOTES

1. Master's degrees include advanced-level studies and a thesism which are not required for Bachelor's degrees or Diplomas.

2. The figures represent official unemployment, i. e. people who are registered at a job centre. However, official statistics exclude 'disguised' unemployment, which is so common among academic graduates that the rate is estimated at three times the official figures. It is more common among women and commonest in the oldest working age groups. See **Akavalaiset työmarkkinat** (Academic Labour Market), Akava, 1989.

3. Turkulainen, M., **1970-luvulla korkeakoulututkinnon suorittaneiden ammatillinen ja alueellinen sijoittuminen Suomessa**, University of Joensuu, Kasvatustieteellisen tiedekunnan julkaisuja, No. 6, 1985.

4. Kivinen, O. et al., **Koulutuksen rajat ja rakenteet**,
Hanki ja jää, Helsinki, 1989, p. 118.

5. Kivinen, O. et al., **op. cit.**

6. Anttalainen, M., **Naisten työt - miesten työt**, Equal Opportunities Consultative Committee, No. 1, 1989, Helsinki.

7. Among agricultural and forestry graduates sex-based income differences were also very marked. This was mainly caused by men's and women's clearly different choices of degree programmes.

APPENDIX 1

Destinations of arts degree holders by sex (%)

Profession	Total	Men	Women
Master level			
Rectors, class and subject teachers	66	57	69
University teachers	5	7	5
Librarians, archivists & museum curators	5	5	5
Editors	4	6	3
Senior research & planning posts in public administration	2	4	1
Managerial posts in enterprises & organizations	2	4	1
PR & tourism officers, cultural functions	1	2	1
Junior clerical & manual jobs	6	4	6
including secretaries	2	0	2
Others	9	11	9
Total %	100	100	100
N	11 678	2 798	8 880
Bachelor level			
Rectors, class and subject teachers	46	39	48
Librarians, archivists & museum curators	5	3	5
Editors	5	9	4
Managerial posts in enterprises & organizations	3	7	2
University teachers	1	3	1
PR & tourism officers, cultural functions	1	2	1
Senior research & planning posts in public administration	1	3	1
Social work	1	1	1
Junior clerical & manual jobs	25	15	27
including secretaries	9	2	11
Others	12	18	10
Total %	100	100	100
N	10 358	1 891	8 467

APPENDIX 2

Destinations of law degree holders by sex (%)

Profession	Total	Men	Women
Master Level			
Court lawyers, prosecutors & senior police officers	20	20	22
Legal councels	20	18	25
Senior research & planning posts in public administration	16	1	22
Managerial posts in enterprises & organizations	13	16	4
Practising lawyers	12	14	7
Senior managerial posts in public administration	4	5	3
Bank & insurance department chiefs	3	3	1
Junior clerical & manual jobs	5	4	9
Others	9	20	14
Total %	100	100	100
N	8 118	6 035	2 083
Bachelor level			
Senior managerial posts in public administration	27	26	28
Legal councels	13	7	16
Managerial posts in enterprises & organizations	9	17	5
Court lawyers, prosecutors & senior police officers	3	3	3
Auditors	2	2	2
Bank & insurance department chiefs	2	3	1
Senior managerial posts in public administration	1	2	0
Social work	1	0	1
Junior clerical & manual work	30	25	33
including secretaries	12	4	16
Others	12	15	11
Total %	100	100	100
N	1 112	379	733

APPENDIX 3

Destinations of social science degree holders by sex (%)

Profession	Total	Men	Women
Master level			
Managerial posts in enterprises & organizations	16	23	6
Senior research & planning posts in public administration	14	16	10
Financial, statistical etc. research & planning	11	11	10
Social work	9	3	19
Editors	7	7	8
Rectors, class and subject teachers	6	5	8
ADP managers, planners & programmers	2	3	2
University teachers	2	2	2
Junior clerical & manual jobs	11	8	16
including secretaries	4	2	7
Others	12	12	10
Total %	100	100	100
N	9 648	5 832	3 816
Bachelor level			
Social work	37	14	43
Librarians, archivists & museum curators	17	8	19
Rectors, class and subject teachers	5	10	4
Managerial posts in enterprises & organizations	4	15	2
Senior research & planning posts in public administration	3	6	2
ADP managers, planners and programmers	1	5	1
Editors	1	3	1
Financial, statistical etc. research & planning	1	3	0
Junior clerical & manual jobs	23	21	23
Others	8	15	5
Total %	100	100	100
N	2 553	539	2 014

APPENDIX 4

Destinations of business administration degree holders by sex (%)

Profession	Total	Men	Women
Master level			
Managerial posts in enterprises & organizations	35	44	22
Rectors, class and subject teachers	11	7	16
Senior research & planning posts in public administration	5	5	6
ADP managers, planners & programmers	5	5	5
Sales & advertising managers	5	5	4
Financial, statistical etc. research & planning	4	4	5
Bank & insurance department chiefs	3	4	3
Auditors	3	5	2
Training directors	3	3	3
Junior clerical & manual jobs	15	10	22
including sales & advertising	4	4	4
including secretaries	3	0	7
Others	11	8	12
Total % .	100	100	100
N	6 398	3 695	2 703
Bachelor level			
Managerial posts in enterprises & organizations	40	58	21
Senior research & planning posts in public administration	5	6	4
Sales & advertising managers	3	4	3
Rectors, class and subject teachers	3	1	5
ADP managers, planners and programmers	3	3	2
Auditors	2	3	1
Band & insurance department chiefs	2	3	1
Junior clerical & manual jobs	29	11	47
including secretaries	16	0	33
including sales & advertising	3	4	3
Others	13	11	16
Total %	100	100	100
N	13 627	6 990	6 637

APPENDIX 5

Destinations of psychology degree holders by sex (%)

Profession	Total	Men	Women
Master level			
Psychologists	67	56	71
Rectors, class and subject teachers	9	7	10
Social work	4	2	5
Senior research & planning posts in public administration	3	6	2
Training directors	3	8	1
Managerial posts in enterprises & organizations	3	7	1
Junior clerical & manual jobs	3	3	4
Others	8	15	6
Total %	100	100	100
N	2 406	605	1 801
Bachelor level			
Rectors, class and subject teachers	30	19	33
Social work	12	6	14
Psychologists	9	10	9
Managerial posts in enterprises & organizations	4	8	2
Senior research & planning posts in public administration	3	7	2
Junior clerical & manual jobs	26	36	22
Others	16	14	18
Total %	100	100	100
N	345	84	261

APPENDIX 6

Destinations of science degree holders by sex (%)

Profession	Total	Men	Women
Master-level			
Rectors, class and subject teachers	37	32	45
ADP managers, planners & programmers	14	17	10
Chemists	10	8	12
Managerial posts in enterprises & organizations	6	8	2
University teachers	5	5	5
Biologists	3	2	3
Engineers	3	3	1
Geologists	2	3	1
Financial, statistical etc. research & planning	2	2	2
Junior clerical & manual jobs	6	5	7
Others	12	15	12
Total %	100	100	100
N	10 252	6 167	4 085
Bachelor level			
Rectors, class and subject teachers	47	42	53
ADP managers, planners & programmers	22	25	18
Managerial posts in enterprises & organizations	4	6	1
University teachers	2	2	2
Senior research & planning posts in public administration	1	1	0
Junior clerical & manual jobs	11	9	13
Others	13	15	13
Total %	100	100	100
N	5 048	2 810	2 238

APPENDIX 7

Destinations of engineering and architecture degree holders by sex (%)

Profession	Total	Men	Women
Master level			
Engineers	42	43	33
Managerial posts in enterprises & organizations	21	23	6
Architects	7	5	20
ADP managers, planners & programmers	5	5	6
Rectors, class and subject teachers	3	3	3
Sales & advertising managers	2	2	2
University teachers	2	2	4
Junior clerical & manual jobs	8	8	8
including technicians	4	4	4
Others	12	12	22
Total %	100	100	100
N	19 730	17 666	2 064

APPENDIX 8

Destinations of agriculture and forestry degree holders by sex (%)

Profession	Total	Men	Women
Master level			
Forestry research and consulting	19	26	4
Managerial posts in enterprises & organizations	18	24	7
Research & consulting in agri- & horticulture & fishing	16	15	18
Rectors, class and subject teachers	10	6	17
Managerial posts in agri-, silvi- & horticulture	6	8	3
Senior managerial posts in public administration	4	3	4
Biologists	2	1	4
Junior clerical & manual jobs	8	4	14
including manual jobs	4	1	10
Others	17	17	29
Total %	100	100	100
N	4 474	3 013	1 461

FRANCE

Alain Charlot, François Pottier

Centre d'études et de recherches sur les qualifications

Le Secrétariat a le regret de devoir annoncer la disparition d'Alain Charlot, analyste de haute réputation, qui a beaucoup contribué à la préparation de ce rapport comme à l'ensemble du projet.

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Première partie

Croissance de l'enseignement supérieur

1 - L'enseignement supérieur français : structures et développement

1.1 - L'enseignement supérieur : les structures

L'enseignement supérieur français se caractérise par une diversité de structures avec des modes d'accès également différenciés : à côté du bloc central constitué par les formations universitaires on peut en effet distinguer d'abord le système formé par les "grandes écoles" d'ingénieurs et de commerce et de gestion. Si certaines sont accessibles dès le baccalauréat, la majorité des entrées dans ces écoles se fait après deux années de préparation (classes préparatoires : CPGE) post-baccalauréat et sur concours. La scolarité y est en général de trois années mais le diplôme terminal est fréquemment suivi pour les ingénieurs d'une ou plusieurs années dans des écoles de spécialisation de niveau troisième cycle. Alors que le secteur public et en particulier le Ministère de l'Education nationale domine largement dans les préparations scientifiques, en revanche les écoles commerciales et de gestion relèvent quasi-exclusivement du secteur privé, dont les chambres de commerce pour les grandes écoles de commerce.

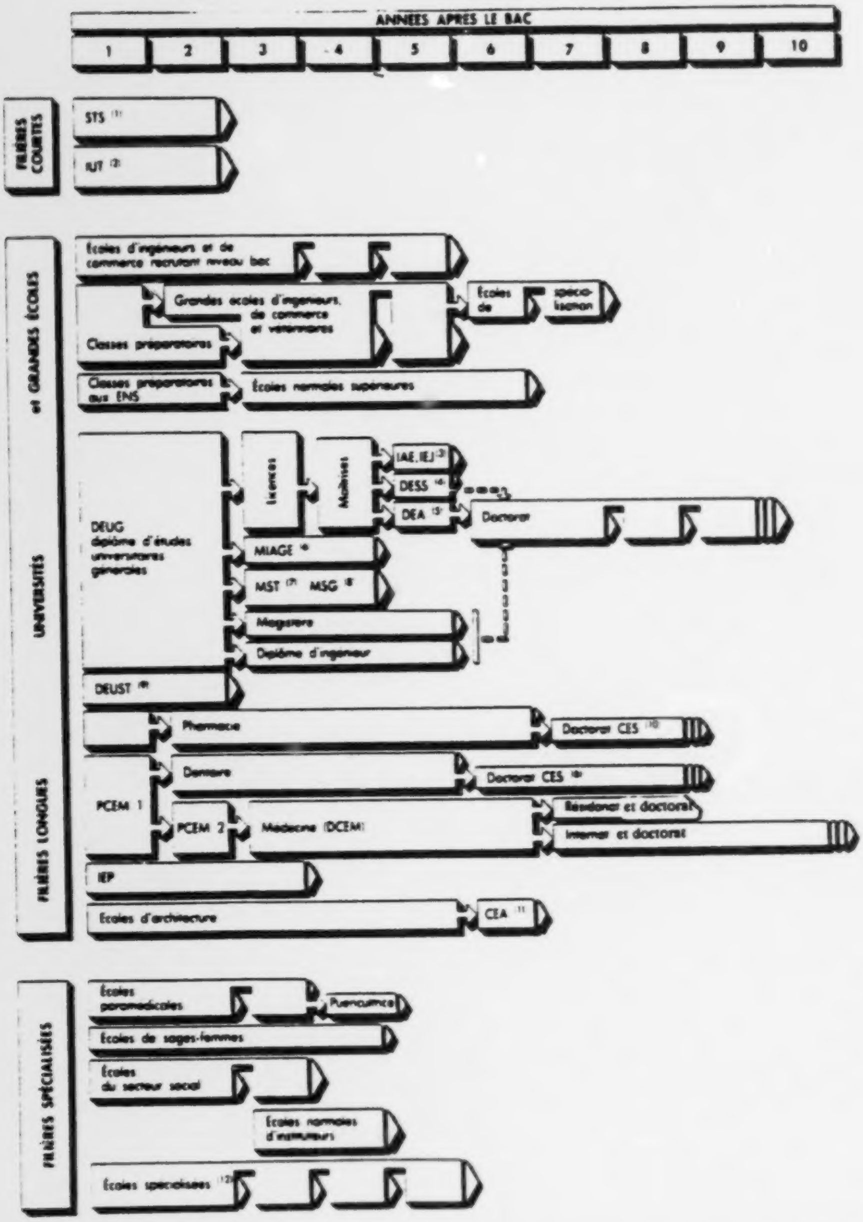
Parallèlement à ces écoles à accès sélectif et conduisant à des études longues, existe une double structure d'études technonologiques supérieures courtes conduisant à des diplômes de niveau baccalauréat plus deux années (Bac + 2) ou niveau III de formation. Ce secteur s'est développé particulièrement rapidement au cours de la dernière décennie. L'accès se fait sur dossier et en fonction du nombre de places disponibles. La plus ancienne de ces formations est constituée des Sections de Technicien Supérieur (STS) et est préparée dans les lycées après le baccalauréat, en principe sur deux années mais exceptionnellement certaines spécialités sont organisées sur trois années de préparation post-baccalauréat. Structure plus récente créée au milieu des années 60, les Instituts Universitaires de Technologie (IUT) se sont eux aussi rapidement développés au cours des années 70. Rattachés aux universités mais avec une organisation distincte elles préparent également en deux années à un diplôme de niveau III, parfois suivi d'une année de spécialisation complémentaire. En principe destinés à une entrée immédiate dans la vie active, les deux diplômes correspondant (BTS et DUT) sont de plus en plus suivis d'une poursuite d'étude vers les études longues universitaires ou en écoles.

Il existe enfin une multitude de formations dispensées dans les écoles spécialisées (1) fréquemment du niveau Bac + 2 années mais également de durée plus longue, parmi lesquelles il faut distinguer les écoles para-médicales et du secteur social et conduisant pour la plupart à des diplômes de niveau Bac + 2 (niveau III) : écoles d'infirmières, de sages-femmes (quatre années d'études), d'éducateur spécialisé, d'assistant de service social pour citer les plus importantes mais également éducateur de jeunes enfants, kinésithérapeute, orthophoniste, manipulateur d'électro-radiologie... ; dans ces écoles, l'accès est fortement sélectif

---

(1) Citons par exemple, les écoles de tourisme-hôtellerie, de secrétariat, de notariat, de communication, journalisme, publicité, relations publiques, d'arts appliqués et autres formations artistiques... Il s'agit pour la quasi-totalité d'établissements privés dont les effectifs demeurent bien inférieurs aux autres formations technologiques supérieures décrites ci-dessus. Le niveau, la durée des études, l'accès sélectif ou ouvert sont très variables d'un établissement à l'autre.

Graphique 1 - Les filières de l'enseignement supérieur


ANNEES APRES LE BAC
1
2
3
4
5
6
7
8
9
10
FILIÈRES COURTES
STS (1)
IUT (2)
FILIÈRES LONGUES
UNIVERSITÉS et GRANDES ÉCOLES
Écoles d'ingénieurs et de commerce recrutant niveau bac
Grandes écoles d'ingénieurs, de commerce et vétérinaires
Classes préparatoires
Écoles de spécialisation
Classes préparatoires aux ENS
Écoles normales supérieures
DEUG diplôme d'études universitaires générales
Licences
Maîtrises
IAE, IEJ (3)
DESS (4)
DEA (5)
Doctorat
MIAGE (6)
MST (7) MSG (8)
Magistère
Diplôme d'ingénieur
DEUST (9)
Pharmacie
Doctorat CES (10)
Dentaire
Doctorat CES (10)
PCEM 1
PCEM 2
Médecine (DCEM)
Résidanat et doctorat
Internat et doctorat
IEP
Écoles d'architecture
CEA (11)
FILIÈRES SPÉCIALISÉES
Écoles paramédicales
Puériculture
Écoles de sages-femmes
Écoles du secteur social
Écoles normales d'instituteurs
Écoles spécialisées (12)

(1) Section de Technicien Supérieur (STS). (2) IUT : Institut Universitaire de Technologie. (3) Instituts Spécialisés : IAE : Institut à Administration des Entreprises. IEJ : Institut d'Etudes Judiciaires. (4) DESS : Diplôme d'Etudes Supérieures Spécialisées. (5) : DEA : Diplôme d'Etudes Approfondies. (6) MIAGE : Maîtrise d'Informatique Appliquée à la Gestion. (7) MST : Maîtrise de Sciences et Techniques. (8) MSG : Maîtrise de Sciences de Gestion. (9) DEUST : Diplôme d'Etudes Universitaires Scientifiques et Techniques. (10) CES : Certificat d'Etudes Spécialisées. (11) CEA : Certificat d'Etudes Approfondies. (12) Ecoles spécialisées : Communication, Informatique, Tourisme, etc...

Source : "L'étudiant" - Le guide des etudes superieures.

(accès sur concours ou dossier) et bien que les diplômés soient pour la plupart d'entre eux classés au niveau III, la durée des études est fréquemment supérieure à deux années après le baccalauréat.

Face à cette pluralité d'établissements à accès sélectif pour l'ensemble, le pôle des formations universitaires longues apparaît largement dominant puisqu'il représente la destination de près d'un bachelier sur deux lors de leur entrée dans l'enseignement supérieur.

En principe, l'accès est libre à l'université pour tout titulaire du baccalauréat de l'enseignement secondaire (2) mais les années 80 ont vu se développer de plus en plus de formations universitaires à accès sélectif. Ce sont d'abord les formations médicales et pharmaceutiques avec l'instauration d'un "numerus clausus" à l'issue de la première année des études à l'université (concours avec nombre de places limitées et fixées annuellement). Dans les autres disciplines, l'accès est en principe libre mais de nombreuses exceptions existent sous diverses formes souvent non explicites, dans les grandes universités parisiennes et quelques universités de province (priorité à certains bacheliers, inscriptions ouvertes que jusqu'à épuisement d'un quota de places fixées par avance) ; et surtout le développement de nouvelles filières professionnalisées dans les universités après les formations de premier cycle, pour lesquelles la demande étudiante est particulièrement forte, a entraîné la création d'un secteur sélectif au sein des formations universitaires : leur accès se fait en effet sur dossier voire après un entretien avec les responsables de la formation ou après avoir suivi des formations complémentaires en premier cycle, et dans tous les cas le nombre de places est limité : citons les maîtrises de sciences et techniques (MST), la maîtrise de sciences de gestion (MSG), la maîtrise d'informatique appliquée à la gestion (MIAGE), organisées sur deux années après le premier cycle, et plus récemment les magistères et les filières universitaires d'ingénieurs (3).

En dehors de ces exceptions - mais dont les effectifs sont en augmentation - le déroulement normal des études est le suivant : un premier cycle de deux années qui débouche sur le diplôme d'études universitaires générales (DEUG) dans les différentes grandes spécialités ou disciplines scientifiques, juridiques, économiques, littéraires et de sciences humaines (4). Le DEUG est suivi d'un deuxième cycle de deux années également qui débouche la première année sur le diplôme de licence et la deuxième année sur la maîtrise.

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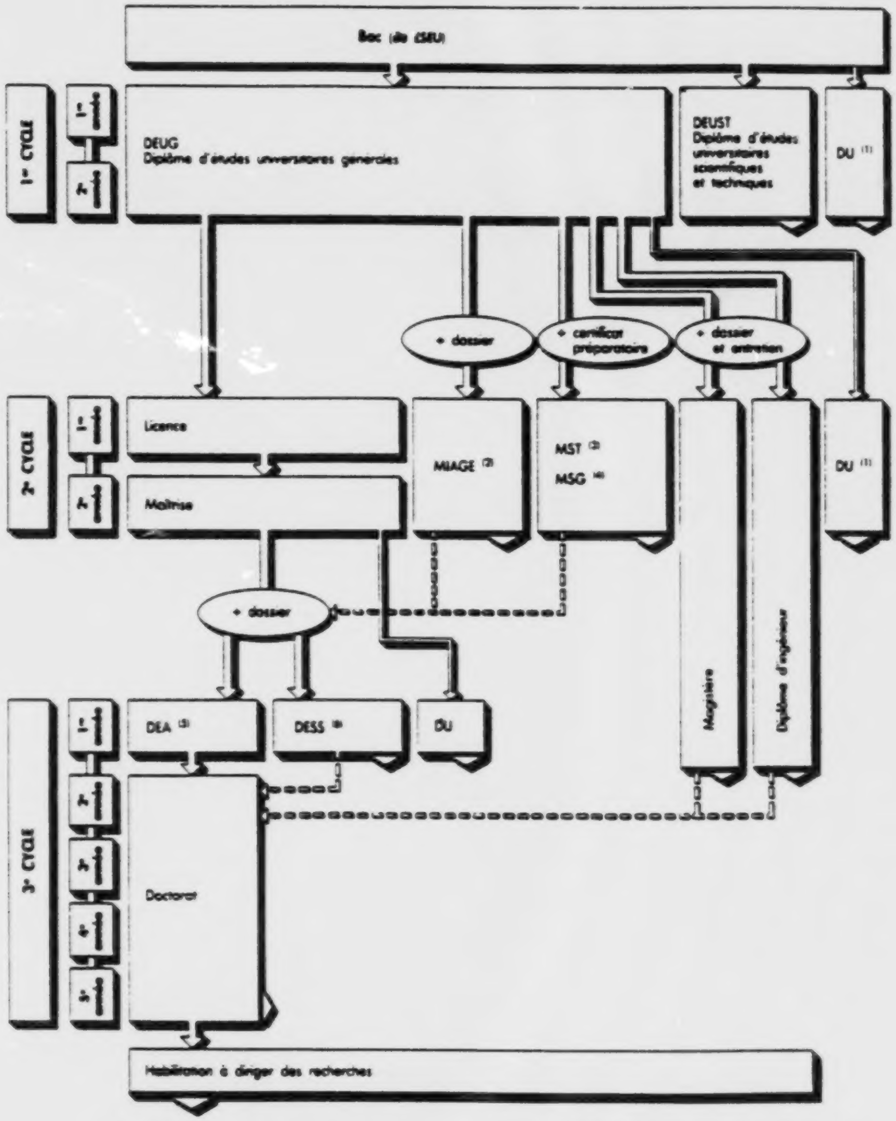
(2) Pour les non-bacheliers qui désirent entrer à l'université, il existe un examen spécial d'entrée mais les étudiants qui optent pour ce moyen représentent des effectifs marginaux dans l'ensemble du flux d'entrée.

(3) Ces deux dernières filières sont très sélectives et à faibles effectifs et conduisent en trois années à un diplôme du niveau de la première année du troisième cycle (Bac + 5 ans).

(4) Il faut rappeler que la loi d'orientation de l'enseignement supérieur de 1984 a créée des filières de premier cycle à vocation professionnelle et destinées à l'entrée dans la vie active : les diplômes d'études universitaires scientifiques et techniques (DEUST) ; après un début de développement rapide, ceux-ci ne concernent que des effectifs réduits par rapport aux autres formations de premier cycle.

Graphique 2 - Les études à l'université


Bac (ou ESEU)
1er CYCLE
1re année
2e année
DEUG
Diplôme d'études universitaires générales
DEUST
Diplôme d'études universitaires scientifiques et techniques
DU (1)
+ dossier
+ certificat préparatoire
+ dossier et entretien
2e CYCLE
Licence
Maîtrise
MIAGE (2)
MST (3)
MSG (4)
DU (1)
+ dossier
Magistère
Diplôme d'ingénieur
3e CYCLE
1re année
2e année
3e année
4e année
5e année
DEA (5)
DESS (6)
DU
Doctorat
Habilitation à diriger des recherches

(1) DU : Diplôme d'Université. (2) MIAGE : Maîtrise d'Informatique Appliquée à la Gestion. (3) MST : Maîtrise des Sciences et Techniques. (4) MSG : Maîtrise de Sciences de Gestion. (5) DEA : Diplôme d'Etudes Approfondies. (6) DESS : Diplôme d'Etudes Supérieures Spécialisées.

Source : "L'étudiant" - Le guide des études supérieures.

La poursuite d'étude en troisième cycle est sélective : elle se fait sur dossier (et souvent après entretien) car le nombre de places est limitée en première année de troisième cycle : deux diplômes existent à ce niveau : le Diplôme d'Etudes Approfondies (DEA) et le Diplôme d'Etudes Supérieures Spécialisées (DESS) ; le premier obtenu en un an avec une initiation à la recherche (préparation d'un mémoire) destine en principe à la préparation d'un doctorat (en deux à quatre années). Pour ceux qui se destinent à l'enseignement supérieur (ou à une carrière dans la recherche publique) il peut être suivi d'une "habilitation à diriger des recherches" (ancien doctorat d'Etat). Le second diplôme du niveau première année de troisième cycle (DESS) est en principe un diplôme terminal plus professionnalisé, comportant cependant également une initiation à la recherche mais avec un caractère plus appliqué et un stage dans la vie professionnelle ; il ne permet pas en principe de préparer ensuite un doctorat mais destine à une entrée immédiate dans la vie active.

Il existe enfin dans les universités des filières spécialisées en général organisées dans des Instituts d'Université soit dès le premier cycle (comme les Instituts d'Etudes Politiques : IEP), soit au niveau du troisième cycle (Instituts d'Administration des Entreprises : IAE, par exemple, ou Instituts d'Etudes Judiciaires : IEJ, etc...) et délivrant soit des diplômes spécifiques (diplômes d'université) soit des diplômes nationaux. Depuis la création des DESS et des DEA beaucoup de ces instituts délivrent eux-même un DESS (comme les IAE) ou bien participent à l'enseignement des DEA et DESS.

Le développement de l'enseignement supérieur

En 1988-1989, la population étudiante (post-baccalauréat) est évaluée à près de 1 400 000 individus. Les universités regroupent la majorité de cette population étudiante avec des effectifs qui approchent le million (compte tenu des instituts et établissements inclus dans celles-ci). Depuis le début des années 60 les effectifs de l'enseignement supérieur ont été multipliés par plus de quatre passant d'environ 300 000 à 1,4 million aujourd'hui.

Cependant l'importance et le rythme des évolutions n'ont pas été identiques d'une formation à l'autre. La croissance universitaire s'est faite essentiellement dans les années 60 à 70 avec un triplement des effectifs en dix ans et la création de nombreuses universités nouvelles dans des villes qui jusqu'alors en étaient dépourvues. La croissance universitaire s'est ensuite poursuivie mais à un rythme beaucoup plus modéré jusqu'à aujourd'hui (5). La croissance récente des effectifs de jeunes bacheliers depuis la fin des années 80 annonce cependant à nouveau une nouvelle période de développement accéléré des formations universitaires dans les années 90. Entre 1987-1988 et 1988-1989, les effectifs universitaires se sont accrus d'une cinquantaine de milliers d'étudiants.

La démographie n'explique d'ailleurs qu'une partie de cette croissance. La durée moyenne des études s'est également accrue.

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(5) Entre 1960 et 1970 le taux de croissance annuel moyen a été de 11.5 %. Depuis 1971 jusqu'à aujourd'hui ce taux n'est plus que de 2.3 %.

Mais la période est marquée également, et en particulier depuis les années 70 par le développement très rapide des formations technologiques supérieures courtes : à côté des sections de techniciens supérieurs (STS) dont les effectifs demeurent relativement stables ou en faible croissance jusqu'au début des années 70, la création des instituts universitaires de technologie en 1966 est suivie de leur développement rapide, puisque dès 1971 ils comportent plus d'étudiants en formation que les STS. La croissance des IUT cependant redevient ensuite beaucoup plus modérée tandis qu'à l'inverse, ce sont les STS qui vont connaître une croissance véritablement exponentielle, spécialement depuis 1982-1983, leurs effectifs quadruplant en quinze ans, entre 1973-1974 et 1988-1989 (plus de 10 % par an). Ce sont les sections de techniciens supérieurs qui ont en réalité absorbé le flux accru des bacheliers technologiques (série F et surtout G) (6) ; une grande partie de cette croissance concerne d'ailleurs des préparations privées du secteur tertiaire préparant au BTS qui ont en effet cru particulièrement rapidement (16 % par an entre 1980 et 1985 contre seulement 8 % pour les STS publiques) mais depuis le milieu des années 80 les préparations publiques et privées connaissent un rythme de croissance identique (11 % par an) qui demeure donc très rapide.

Face à ce développement important et rapide des formations technologiques courtes de l'enseignement supérieur, les formations qui relèvent du système des grandes écoles se sont développées à un rythme beaucoup plus modeste.

Les effectifs des classes préparatoires ne se sont accrus que de 3,7 % par an sur les quinze dernières années et les écoles d'ingénieurs de 3,2 %. Seules les écoles de commerce et de gestion dont les effectifs étaient encore réduits à la fin des années 70 (une quinzaine de milliers seulement) ont vu leurs effectifs s'accroître rapidement depuis le début des années 80 (+ 10,7 % par an).

Les années récentes montrent cependant une accélération de la croissance des classes préparatoires (+ 9 % par an depuis 1987) aussi bien que des écoles d'ingénieurs (+ 5,5 %).

C'est qu'aujourd'hui, l'ensemble des établissements d'enseignement supérieur subissent une demande accrue et particulièrement vive de formation en provenance d'effectifs de jeunes bacheliers de plus en plus nombreux et désireux dans leur presque totalité de poursuivre des études supérieures.

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(6) Les premiers bacheliers technologiques ont été diplômés en 1969. Leur croissance a été très rapide (7 % en accroissement annuel moyen entre 1972 et 1984 contre 1 % pour les bacheliers généraux sur la même période).

Tableau 1

Evolution des effectifs de l'enseignement supérieur par grandes catégories d'établissement (1960-1961 à 1988-1989)

	1960 1961	1965 1966	1970 1971	1975 1976	1980 1981	1985 1986	1988 1989
Universités (sauf IUT)	214 672	413 756	637 597	767 732	805 026	894 767	956 158
IUT (à partir de 1966-67)			24 195	43 256	53 826	62 867	67 465
STS	8 014	25 740	26 840	46 216	67 315	117 349	163 791
CPGE	21 038	26 660	32 601	35 312	40 123	47 334	57 940
Ecoles d'ingénieurs (y compris universitaires)	20 770	26 609	30 512	33 788	36 952	45 095	52 782
Ecoles de commerce et gestion (2)	5 286	5 593	9 394	10 929	17 730	28 633	33 265
Ecoles normales d'instituteurs (post-bac)	8 709	9 875	14 520	15 981	11 354	17 452	13 376
Facultés privées	...	...	...	10 000	16 256	18 435	18 361
S/Total (avec estimation pour les données absentes)	285 000	515 000	780 000	952 600	1 039 252	1 222 407	1 345 000
S/Total avec doubles comptes exclus (1) (estimations)	270 000	490 000	740 000	902 600	974 400	1 143 920	1 275 000
Autres formations sup. (estimations pour les effectifs incomplets)							
Ecoles supérieures d'arts et d'architecture	...	...	...	25 289*	31 000*	33 400*	33 721
Ecoles para-médicales (hors univ.) et de formation sociale (recrutant une majorité de bacheliers)	...	...	...	82 158	82 506*	69 835	*63 000
Autres écoles (adminis. vétérinaires, ENS, notari. communication)	...	...	...	10 000*	11 425	17 496	18 258
S/Total (évaluations)				120 000	131 000	121 000	115 000
TOTAL enseignement supérieur (environ)				1 023 000	1 105 000	1 265 000	1 390 000

(1) Double-compte : étudiants inscrits la même année dans plusieurs établissements, en particulier à l'université et dans une classe préparatoire par exemple ou dans une école.

(2) Le recensement des écoles est très incomplet jusqu'en 1975. La prise en compte à partir de cette date de l'ensemble des écoles dans le champ explique le brusque accroissement des effectifs observé en 1976.

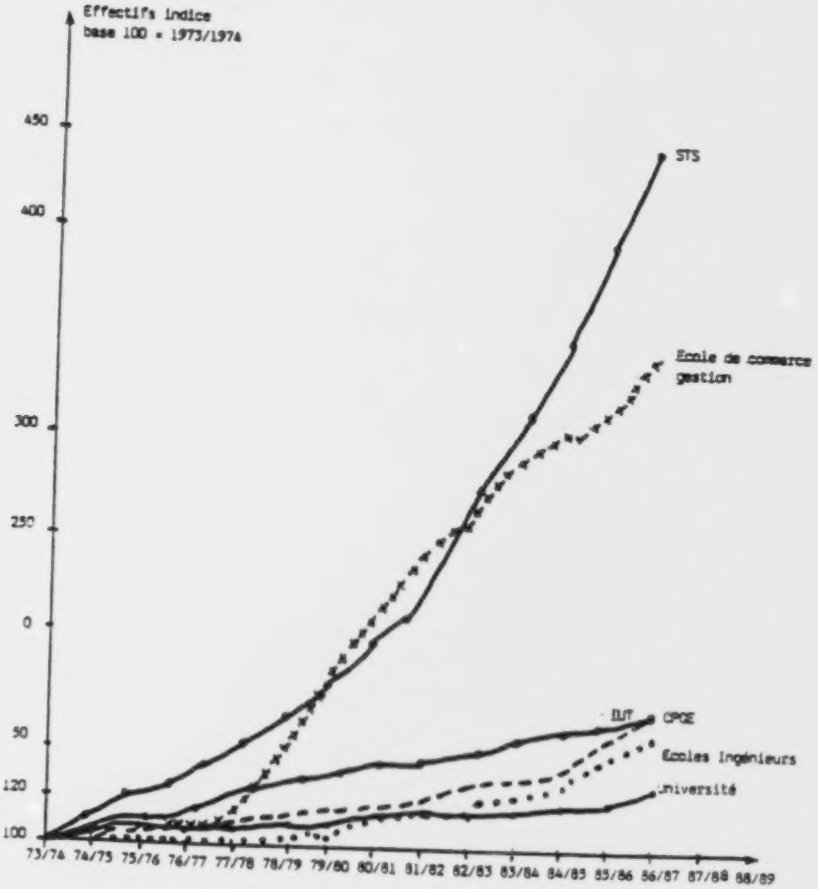
Source : INSEE - Données sociales 1990 plus estimations pour quelques données absentes et DEP - Statistiques des enseignements. Edition annuelle - Ministère de l'Education nationale.

Légende : * estimations ... données manquantes — inexistant à cette date

Graphique 3

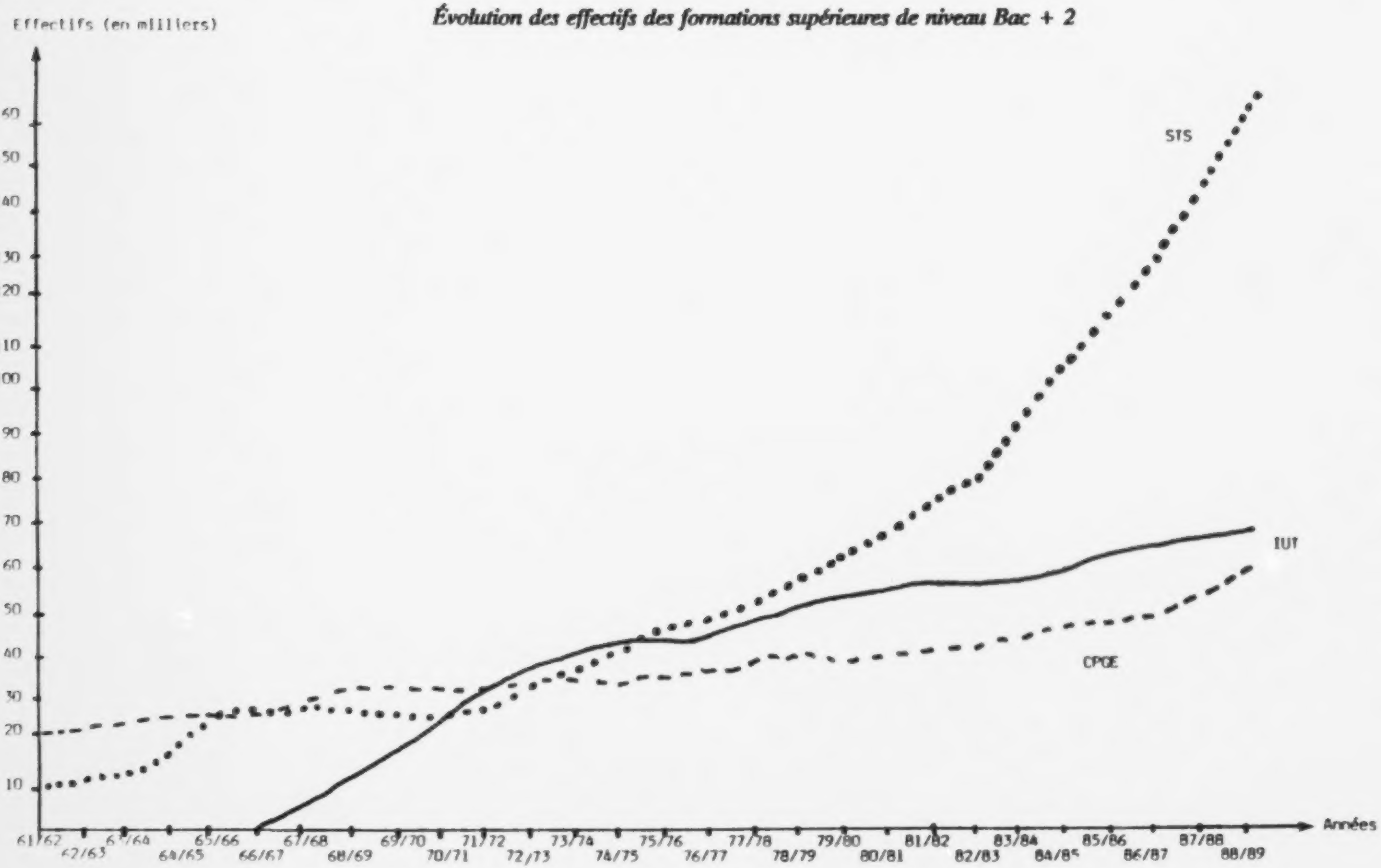
Evolution des effectifs des principales formations de l'enseignement supérieur (en indice) (1973-1974 à 1988-1989)

	EFFECTIFS EN FORMATION			
	1973-1974	1978-1979	1983-1984	1988-1989
Université	711 683	798 137	865 153	956 158
STS	37 039	56 772	93 901	163 791
IUT	39 280	50 283	57 817	67 465
CPGE	33 771	39 470	44 003	57 940
École d'ingénieurs	33 021	34 359	40 412	52 782
École Commerce-gestion	9 688	12 059	24 578	33 26



Graphique 4

Évolution des effectifs des formations supérieures de niveau Bac + 2



2 - *L'accroissement du flux de diplômés de l'enseignement supérieur va s'accélérer dans les années 90*

Depuis le début des années 70, on assiste à un accroissement régulier du taux d'accès au niveau IV (baccalauréat) et du nombre de bacheliers par génération. Depuis le milieu des années 80, une accélération est intervenue faisant suite à l'objectif que s'est fixé l'Education nationale de scolariser 80 % (7) d'une classe d'âge jusqu'au niveau du baccalauréat à l'horizon 2000. Cet objectif volontariste a rencontré un consensus national, l'idée étant largement répandue de la nécessité d'élever le niveau de formation des jeunes pour répondre aux besoins économiques et sociaux de la société d'aujourd'hui et du vingt et unième siècle. Les travaux prospectifs réalisés par le BIPE et le Haut Comité Education-Economie (8) mettent en effet en évidence la profonde transformation de la structure des emplois à l'horizon 2000 ; en particulier ils montrent la baisse des emplois les moins qualifiés (niveau VI de formation) et à l'inverse la croissance des emplois exigeant une formation de niveau supérieur (I à III), et qui devrait se traduire par des flux de recrutement de plus en plus importants de jeunes diplômés (Cf. Graphique 6).

Ce pari sur l'avenir repose en grande partie sur la réussite et le développement des baccalauréats professionnels puisque ceux-ci devraient scolariser en l'an 2000 plus de 200 000 jeunes, 80 000 obtenant le baccalauréat professionnel ce qui représentera 10 % d'une génération.

Cet objectif est d'autant plus ambitieux qu'il s'inscrit dans une baisse démographique intervenue depuis les années 70, même si les années 80 sont marquées par une légère reprise (Cf. Graphique des naissances).

Mais les progrès continus des poursuites d'études et de la scolarisation font plus que compenser cette baisse démographique. L'allongement des scolarités fait d'abord sentir ses effets au lycée : la hausse des taux de scolarisation par âge est particulièrement rapide sur les jeunes de moins de 20 ans, ce qui se traduirait à l'horizon 2000 par la scolarisation de la quasi totalité des jeunes jusqu'à 19 ans (9). Mais la hausse de cette scolarisation s'observe également bien au delà, la proportion de bacheliers s'inscrivant dans l'enseignement supérieur à la rentrée suivante s'élevant d'année en année : à la rentrée 89, celle-ci approchait les 100 % pour l'ensemble des bacheliers généraux et technologique (92 % pour le bloc université, IUT, STS et CPGE auquel s'ajoute 5 % pour les

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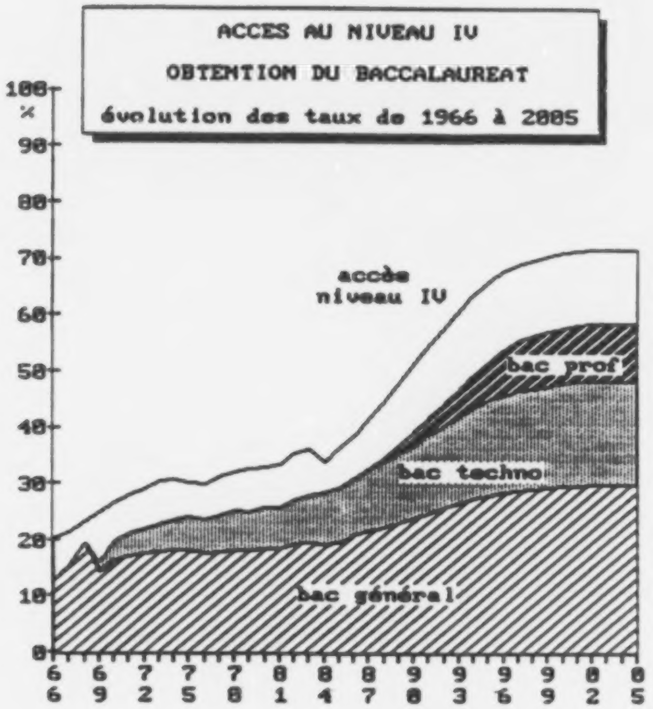
(7) Cet objectif a été ramené à 74 % pour rester dans le domaine du possible, objectif qui demeure ambitieux compte tenu des ruptures que cela suppose dans notre système éducatif : l'accès au niveau IV a progressé de 20 points en 20 ans. Il s'agit d'en gagner 30 en 15 ans. L'horizon 2000 représente donc un repère plus qu'un butoir. Cf. Plan pour l'avenir de l'Education Nationale - René Monory - 15 décembre 1987.

(8) Bureau d'Information et de Prévision Economique (BIPE) - Haut Comité Education-Economie. Rapport n° 2, Education-Economie : une autre approche de l'avenir. HCEE - Octobre 1987.

(9) Cf. INSEE - Division "Emploi" : Projection de population scolarisée et de population active pour les jeunes de moins de 25 ans. Note ronéotée - Août 1989. Les taux de scolarisations des 15-19 ans atteindraient 96 % en l'an 2000 pour les femmes et 93 % pour les hommes tandis que ceux des 20-24 ans seraient respectivement de 45 % et 43 % à la même date.

Graphique 5

Taux d'obtention du baccalauréat et taux d'accès au niveau IV par cohorte (ou génération moyenne)



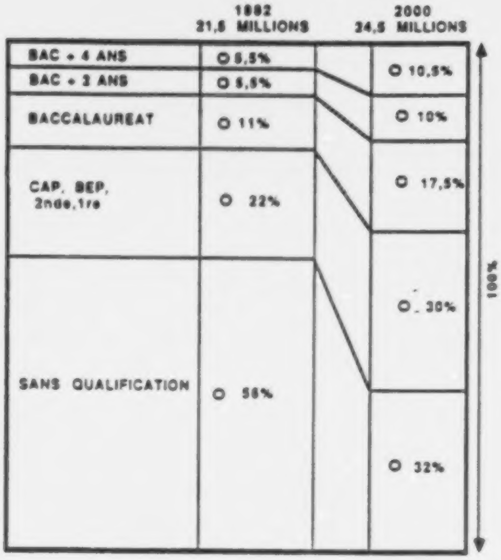
N.B : Taux d'accès au niveau IV : Taux d'entrée en terminale en septembre de l'année précédente.

Source : Annexe au "Plan pour l'avenir de l'Education Nationale" René Monory - Ministre de l'Education Nationale - 15 décembre 1987.

Et note ronéotée - MEN - Direction de l'information et de la Communication - Le Baccalauréat 1990.

Graphique 6

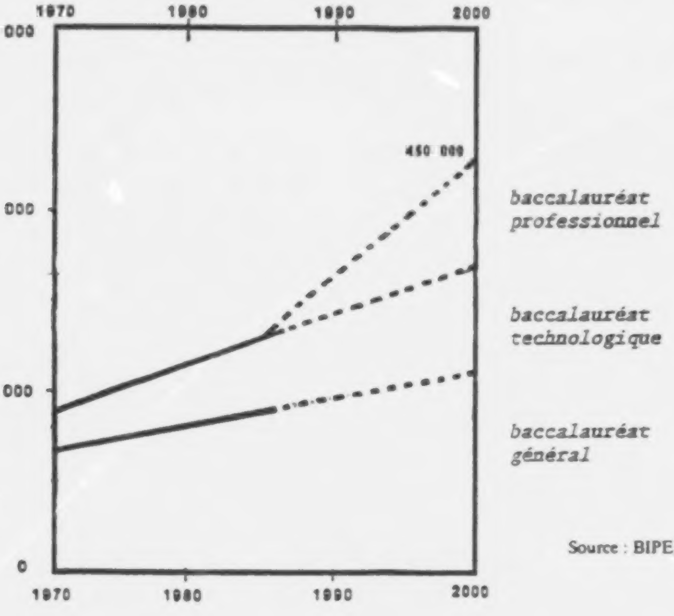
Niveau de formation de la population active occupée (prévisions à l'horizon 2000)



Source : BIPE/HCEE - 1987.

Graphique 7

Flux annuel de bacheliers (prévisions jusqu'à l'an 2000)



Source : BIPE/HCEE - 1987.

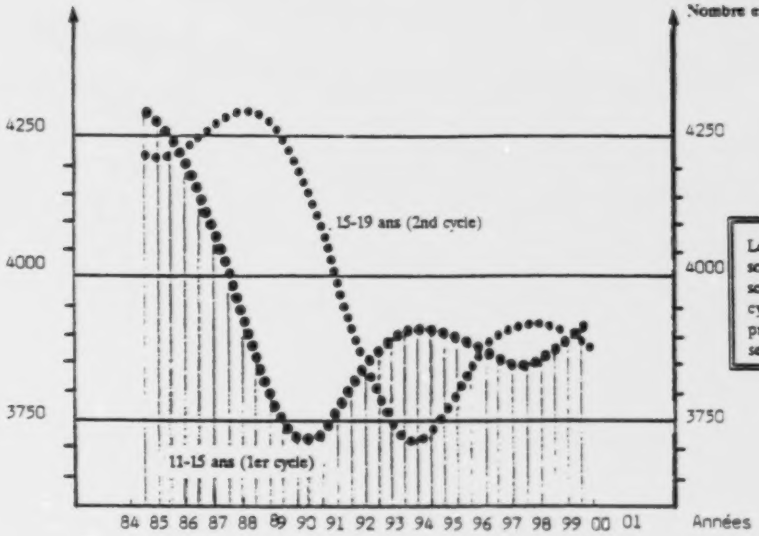
entrants dans les formations post-baccalauréat sanitaires et sociales), l'incertitude demeurant sur le comportement des bacheliers professionnels compte tenu de leur création encore trop récente pour en déduire une hypothèse sur leur poursuite d'études. La croissance des bacheliers se répercute ainsi presque intégralement sur les flux d'entrée dans les établissements d'enseignement supérieur et donc sur les effectifs d'étudiants post-baccalauréat aussi bien que sur les flux de diplômés des niveaux III à I.

En outre, cet objectif quantitatif se double d'une volonté de rééquilibrer les différentes séries du baccalauréat au profit des séries scientifiques et en particulier de la série C (mathématiques) et des baccalauréats technologiques industriels (F), compte tenu des besoins en scientifiques dont le pays a besoin. La croissance accélérée observée à partir de 1988, montre effectivement un accroissement plus important des bacheliers C qui progressent de 15,4 % en 1988, de 15,5 % en 1989 et de 18,6 % en 1990 tandis que l'ensemble des bacheliers généraux ne progressent respectivement que de 11,9 %, 9,4 % et 9,5 % pendant ces mêmes années. En revanche, cette politique de rééquilibrage semble rencontrer des difficultés dans les baccalauréats technologiques, les bacheliers G continuant de croître à un rythme très supérieur (+ 9 % en 1990) à l'ensemble de ces baccalauréats tandis que c'est l'inverse pour les bacheliers F dont le taux d'accroissement est beaucoup plus lent (+ 4,7 % en 1990).

Si ces tendances se confirment, il faut donc s'attendre à une croissance accrue des formations scientifiques (universités et classes préparatoires + écoles) et des formations tertiaires de niveau III, en particulier des sections de techniciens supérieurs.

Graphique 8

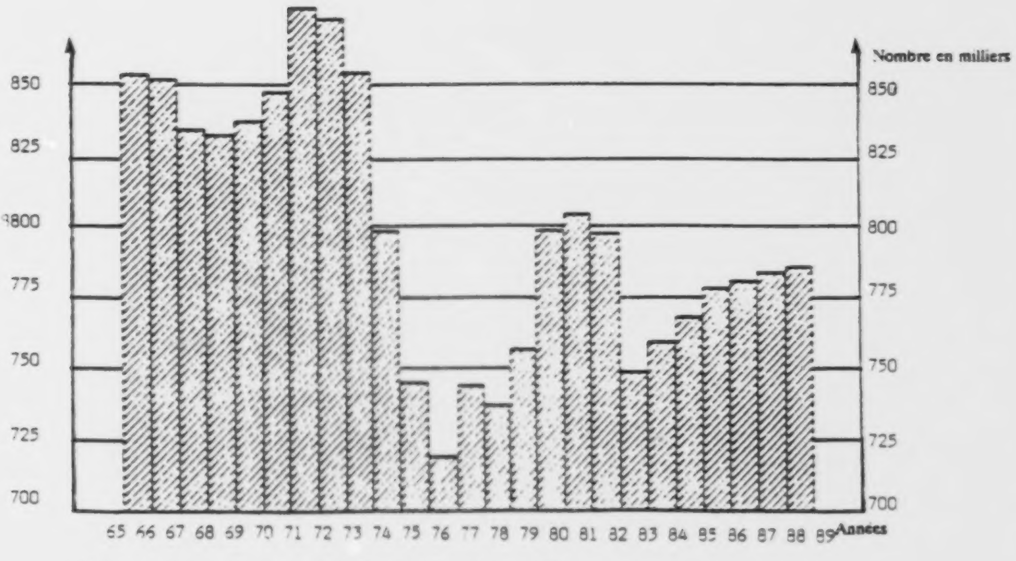
Evolution des classes d'âge (11-15 ans et 15-19 ans)



Les classes d'âge 11-15 ans et 15-19 ans sont représentatives des populations scolarisables dans le 1er cycle et les 2nd cycles (général, technique et professionnel) de l'enseignement secondaire.

Graphique 9

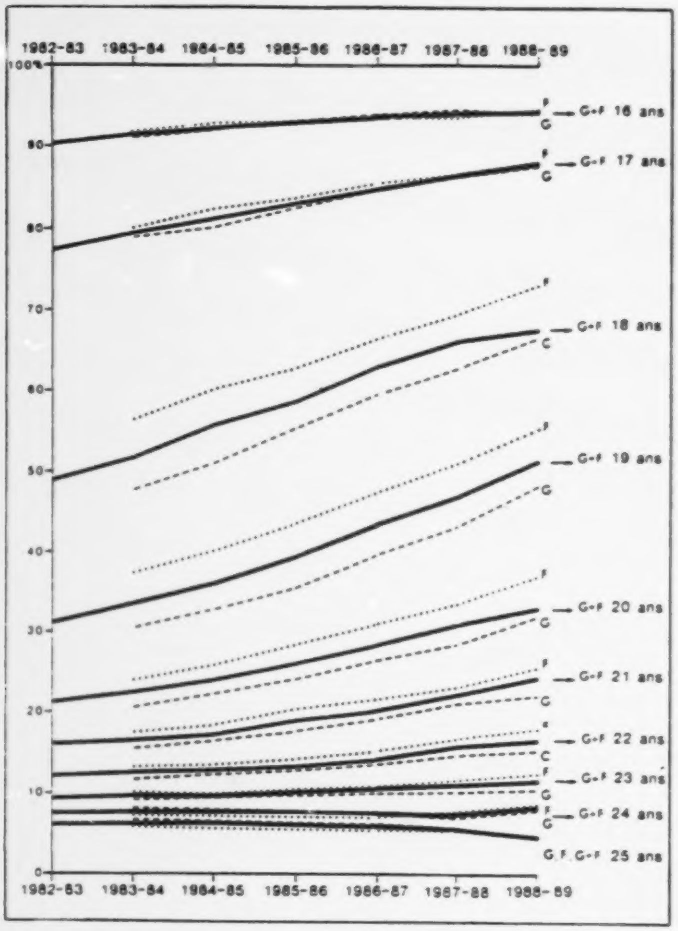
Evolution du nombre de naissances



Source : Annexe au Plan Avenir de l'Education (Plan Monory) 1987.

Graphique 10

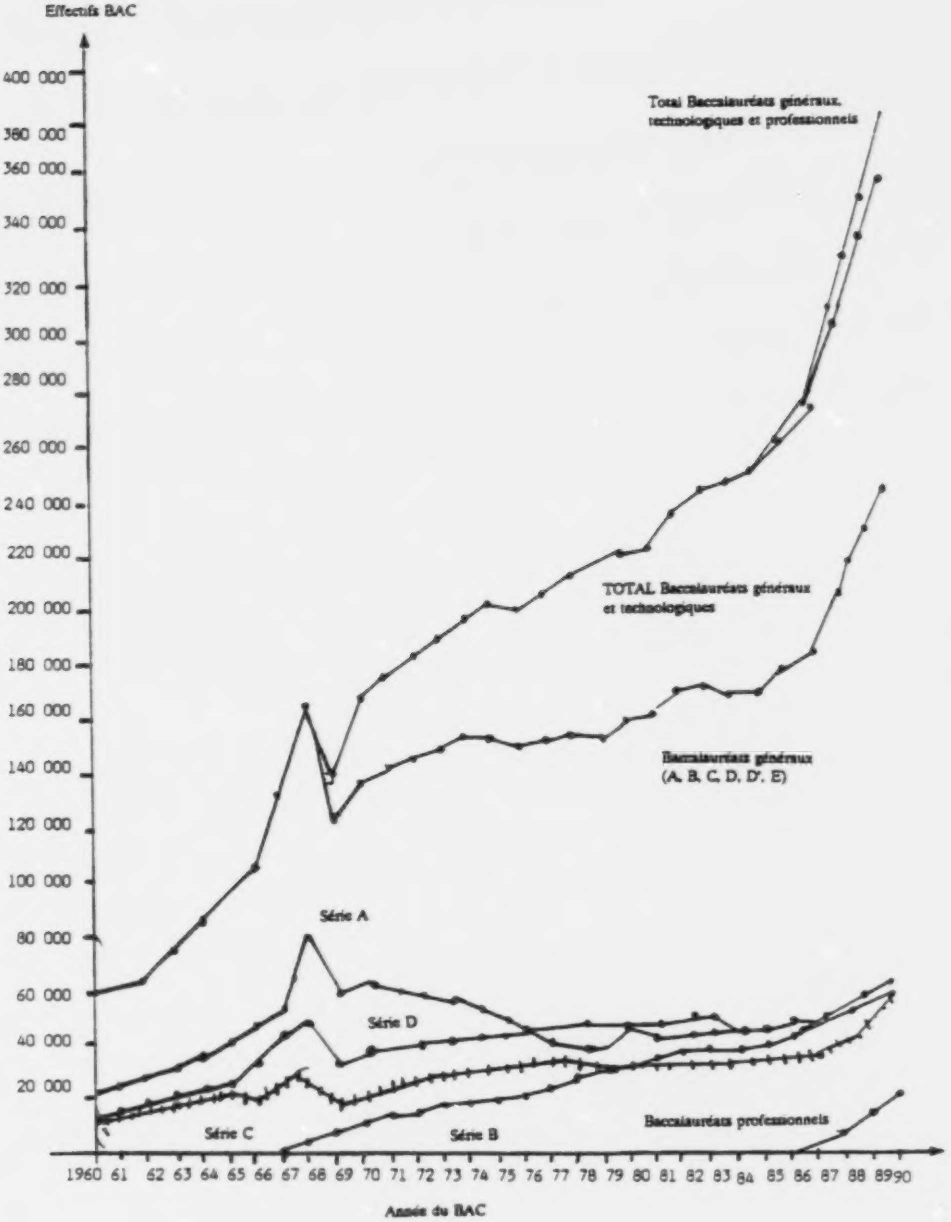
Evolution sur six ans des taux de scolarisation (16 à 25 ans)



Source : MEN - DEP 4. Note d'information n° 90.02. La scolarisation des jeunes de 16 à 25 ans, 1988-1989- Janvier 1990.

Graphique 11

Evolution du nombre de baccalauréats 1960-1990



3 - L'entrée dans l'enseignement supérieur : orientation, abandon et réussite selon l'origine scolaire

La nature des études secondaires suivies et en particulier de la classe terminale des lycées détermine largement le choix des études supérieures mais également l'itinéraire et la réussite dans ces études. L'opposition est grande entre bacheliers généraux et bacheliers technologiques, les premiers se dirigeant majoritairement vers les études universitaires, les classes préparatoires aux grandes écoles et les IUT tandis que les seconds s'orientent vers les sections de techniciens supérieurs. L'extraordinaire essor des sections de techniciens supérieurs depuis vingt ans s'est ainsi appuyé sur le développement rapide des baccalauréats technologiques et la croissance de leur propension à poursuivre des études post-bac : alors qu'à l'origine la majorité des bacheliers technologiques ne poursuivaient pas d'études au-delà et entraient dès leur baccalauréat sur le marché du travail, leur taux de poursuite d'études se rapproche rapidement aujourd'hui (75 %) de celui des bacheliers généraux (qui est presque de 100 %).

Mais les écarts peuvent être très importants selon les séries du baccalauréat : ainsi depuis longtemps les bacheliers de la série C sont pratiquement 100 % à poursuivre des études supérieures tandis qu'à l'opposé les bachelières de la série G1 (secrétariat) qui n'était qu'une sur deux à poursuivre des études au-delà du baccalauréat au milieu des années 80 ne rattrapent que lentement leur retard sur les autres baccalauréats.

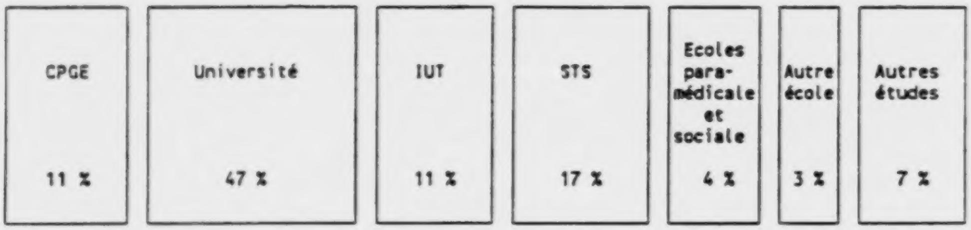
De même, l'orientation vers chaque type d'études mais également vers chaque discipline ou spécialité de formation dépend en grande partie de la série du baccalauréat : ainsi les disciplines universitaires accueillent plus de deux bacheliers généraux sur trois tandis que les sections de techniciens supérieurs représentent plus de 40 % des poursuites d'études des bacheliers technologiques contre 25 % seulement pour l'université (hors IUT).

Mais les orientations sont encore plus contrastées si l'on tient compte des séries détaillées du baccalauréat et des grandes disciplines ou spécialités (Cf. Graphique) ; plus de 40 % des bacheliers de la série A s'orientent vers les lettres-sciences humaines, de même près d'un bachelier C sur deux se dirige vers les classes préparatoires aux grandes écoles et plus de 20 % vers les études universitaires scientifiques. A l'inverse, les bacheliers B ont une orientation plus diversifiée (sciences économiques, lettres-sciences humaines, droit, STS...). Du côté des bacheliers technologiques si l'orientation vers les STS demeure dominante (38 %) quelle que soit la série d'origine, certains bacheliers se dirigent de façon majoritaire vers ces études : 59 % pour la série F1 (construction mécanique), 55 % pour F2 (électronique), 70 % pour la série F10 (microtechnique). Le bac F8 (sciences médico-sociales) conduit une grande partie des bacheliers vers les formations sanitaires et sociales. Les bacheliers technologiques du secteur tertiaire (G) prennent une orientation plus diversifiée, les disciplines universitaires (droit, sciences économiques, lettres-sciences humaines) venant à concurrence avec les STS, les bacheliers de la série G3 (techniques commerciales) s'orientant d'ailleurs plus vers l'université que vers les enseignements technologiques (STS + IUT).

Graphique 12

Répartition d'un flux annuel de bacheliers entrant dans l'enseignement supérieur après leur baccalauréat

211 000 en 1983-1984 ; 302 000 en 1988-1989.



Sources : CEREQ - Observatoire EVA 1986 (Bacheliers 1983 interrogés en 1986).
DEP - Les sorties du système éducatif en 1988.

Tableau 2

Taux de poursuite d'études des bacheliers (10) (bacheliers entrés dans l'enseignement supérieur dès la rentrée qui suit le baccalauréat)

Type de Bac et année d'obtention	Bacheliers généraux (A, B, E, D, D', E)				Bacheliers technologiques (F, G, H)			
Etudes supérieures	1972	1978	1981	1989	1972	1978	1981	1989
Université disciplines générales (sans doubles comptes CPGE)	61,5	58,3	63,5	64,5	14,8	16,9	19,5	25,0
IUT (1ère année)	7,7	7,3	8,0	8,5	17,7	14,7	12,0	8,0
CPGE (1ère année)	11,9	12,9	12,5	13,5	0,3	0,8	1,0	1,0
STS (1ère année)	5,5	8,9	10,0	11,0	17,7	19,0	24,0	41,0
Ensemble pour 100 bacheliers de l'année	86,6	87,4	94,0	97,5	50,5	51,4	56,5	75,0
Effectifs bacheliers	147352	157227	161389	230203	36844	61036	63389	109411

Source : Ministère de l'Education nationale - DEP - Notes d'information n° 73-38, 79-33, 90-25.

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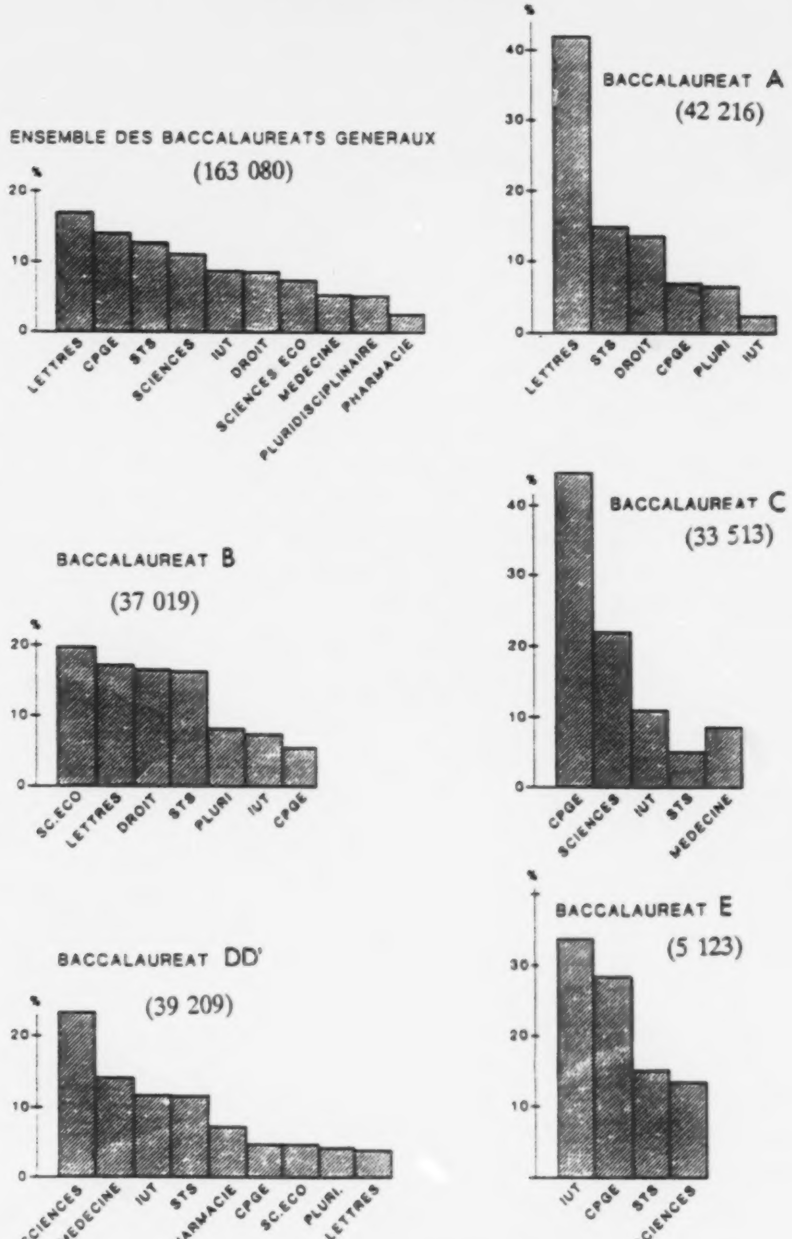
(10) Bacheliers entrés en première année d'Université, en première année d'IUT, en première année de classe préparatoire aux grandes écoles et en première année de section de technicien supérieur à la rentrée qui suit l'obtention du baccalauréat. Il faudrait y ajouter les bacheliers entrés dans les écoles recrutant dès le baccalauréat (Ecoles Nationales d'Ingénieurs, Ecoles privées diverses, Ecoles de formations sanitaires et sociales...) qui représentent environ 13 à 15 % du flux d'entrée des jeunes bacheliers dans l'enseignement supérieur toutes séries confondues.

Graphique 13

Orientations des bacheliers généraux 1985 à la rentrée 1985-1986

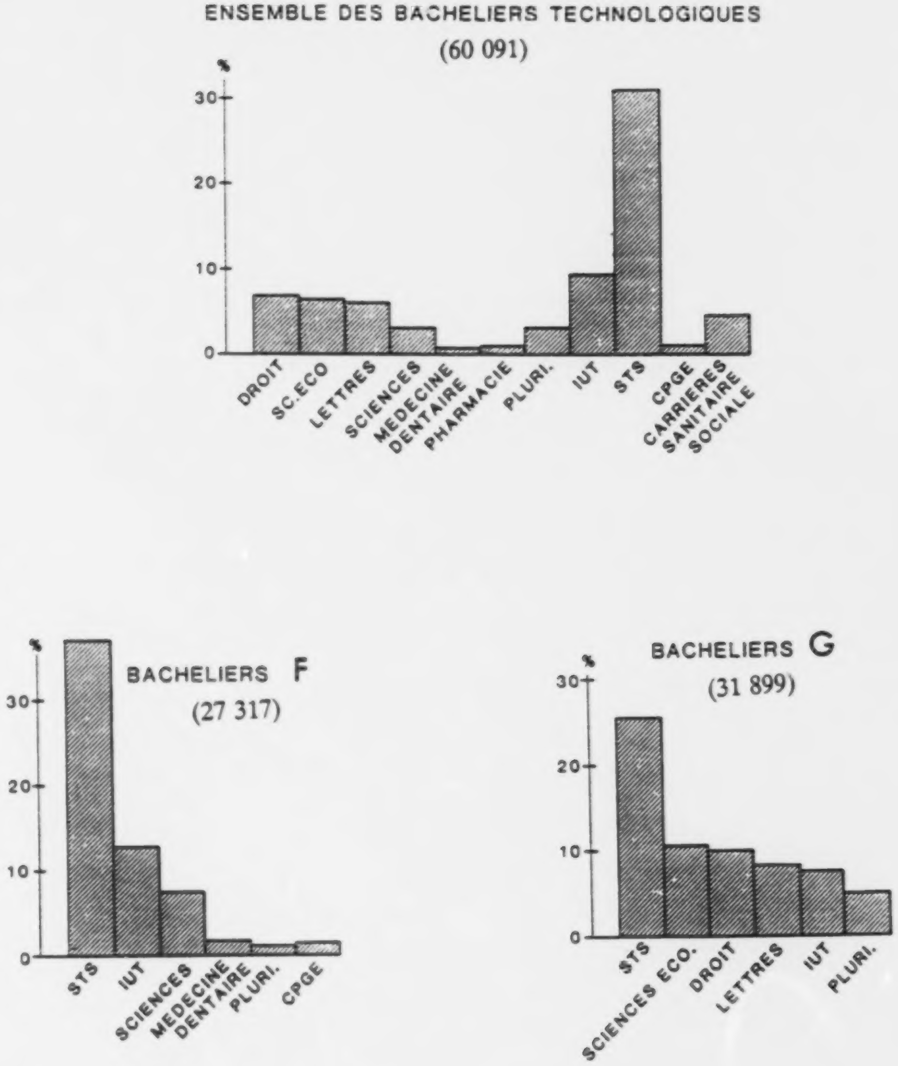


N.B. Entre parenthèses (effectifs des bacheliers ayant poursuivi des études supérieures en 1985-1986.

Source : Ministère de l'Education nationale - DEP note n° 87-39 - Septembre 1987.

Graphique 14

Orientation des bacheliers technologiques 1985
à la rentrée 1985-1986



Sources : MEN/DEP - Note n° 87-39.

Mais des déterministes encore plus étroits s'observent entre série du baccalauréat et spécialité de STS ou département d'études d'IUT (11).

Cependant l'ensemble de ces poursuites d'études ne vont pas toutes se concrétiser par l'obtention d'un diplôme supérieur au baccalauréat. Certains vont rapidement obtenir en deux ans (voire en trois ans) un diplôme de niveau III et soit s'orienter vers le marché du travail, soit poursuivre des études au-delà vers les niveaux II et I. D'autres vont connaître plus de difficultés et un itinéraire moins linéaire, l'abandon des études entreprises après le baccalauréat étant soit suivi d'un abandon des études supérieures, soit suivi d'un changement d'orientation et d'une réorientation vers d'autres études supérieures. C'est là l'une des caractéristiques importantes du fonctionnement de l'enseignement supérieur français et en particulier du système universitaire qui par son ouverture permet ces cursus de formation plus complexes et ces "secondes chances" après un premier "échec". Ces réorientations se font essentiellement après l'abandon de la première année d'études supérieures, des études universitaires vers les formations technologiques courtes (IUT, STS, formations sanitaires et sociales) ou à l'inverse, de ces formations, voire des classes préparatoires vers les études universitaires générales. Elles sont particulièrement importantes dans les études universitaires où elles représentent plus de 25 % du flux d'entrants de jeunes bacheliers (non compris les réorientations internes à l'université entre disciplines universitaires). De même, les élèves des classes préparatoires aux grandes écoles qui n'accèdent pas à une école se réorientent dans leur quasi-totalité vers d'autres études et en particulier vers les études universitaires (25 % du flux d'entrée en classe préparatoire scientifiques).

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(11) Citons par exemple les bacheliers F3 (électrotechnique) qui représentent 89 % des bachelier entrant en STS électrotechnique, de même les bacheliers F1 qui sont 85 % des entrants en STS mécanique, 59 % de F2 dans les entrants en STS électrotechnique, 62 % de F2 (comptabilité) dans les entrants en STS comptabilité, etc...

Cf. Alain Charlot, Jean-Luc Pigelet : "L'après-bac - Itinéraires et réussite après trois ans d'études", CEREQ, Collection des Etudes n° 52 - Octobre 1989.

Tableau 3

Le devenir des bacheliers entrés dans l'enseignement supérieur (bacheliers 1983) dès leur baccalauréat

Bâcheliers entrés après leur Bac en...	**Obtiennent au moins un diplôme de niveau III (1)**	**Se réorientent (2)**	**Abandons des études supérieures sans diplôme supérieur (3)**	**TOTAL**
Disciplines universitaires générales (DEUG) et médicales (PCEM 1, 1ère année de pharmacie)	56 %	26 %	18 %	100 %
STS (1ère année)	70 %	8 %	22 %	100 %
IUT (1ère année)	76 %	13 %	11 %	100 %
CPGE Scientifiques	75 %	25 %	–	100 %

(1) DEUG, PCEM, 2ème année de pharmacie, BTS, DUT.
Pour les classes préparatoires : réussite au concours d'entrée dans une école en un, deux ou trois ans.

(2) Une partie de ceux-ci vont obtenir ultérieurement un diplôme supérieur.

(3) Abandon après une, deux ou trois années d'études supérieures sans avoir obtenu un diplôme supérieur.

Source : CEREQ - Observatoire des Entrées dans la Vie Active - bacheliers 1983 interrogés en 1986 et 1988.

Du coup, l'abandon des études supérieures après un échec dans les disciplines universitaires est en réalité relativement plus limité qu'il n'y paraît, une partie de ces échecs en premier cycle universitaire étant suivis d'une réorientation vers d'autres études supérieures et en particulier vers des formations conduisant la majorité de leurs étudiants à l'obtention d'un diplôme de niveau III (DUT, BTS, formations para-médicales ou sociales). En outre, l'évolution récente montre que les sorties nettes des études universitaires de premier cycle sur échec sont en diminution.

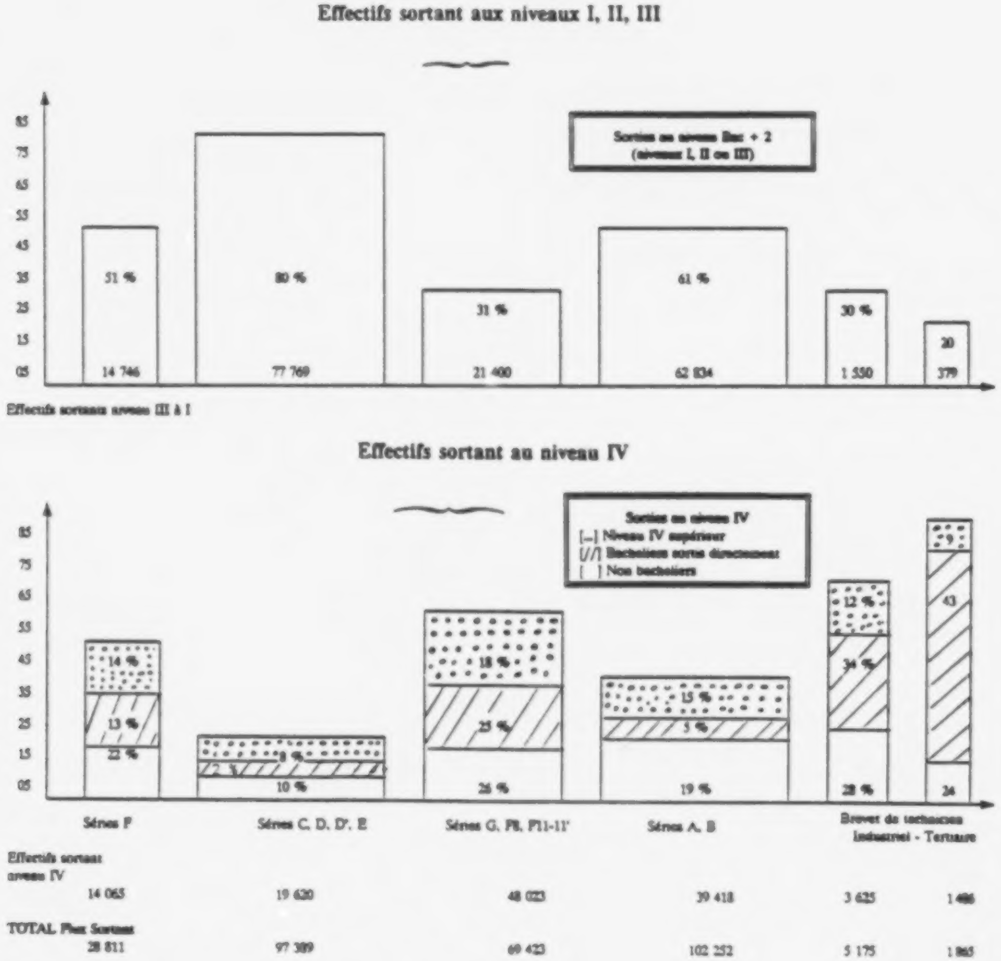
Mais les réorientations sont beaucoup plus réduites à partir des formations technologiques et en particulier des STS. C'est que ces possibilités de reconversion sont surtout utilisées par les bacheliers généraux. Les conséquences d'un échec seront donc beaucoup plus pénalisantes pour les bacheliers technologiques et fréquemment suivies d'un abandon définitif des études supérieures que pour les bacheliers généraux. C'est en particulier le cas des séries technologiques tertiaires (G, F8, F11), fortement féminisées et où le cumul de proportions importantes d'échecs au baccalauréat, de bacheliers ne poursuivant aucunes études supérieures, et d'échecs dans les études supérieures a pour conséquence que près de 70 % du flux annuel de candidats au baccalauréat qui quittent les classes terminales correspondantes ne dépasse pas le niveau IV de formation (Graphique 15). Cette proportion n'est que de 20 % pour les séries scientifiques générales (C, D, E) et de moins de 40 % pour les séries littéraires et économiques (A, B), les séries industrielles (F) se répartissant à égalité entre le niveau IV et au-delà.

Ainsi, le problème des abandons sur échecs est particulièrement aigu dans les sections de techniciens supérieurs puisque les sorties sans diplôme représentent en effet presque la moitié des sortants de ces formations (hors poursuite d'études).

Dans les IUT, la situation est différente : 22 % seulement des sorties nettes concernent des non-diplômés. C'est qu'une grande part de ceux ayant échoué au DUT se réorientent vers des formations générales universitaires. Beaucoup en effet sont titulaires d'un baccalauréat général et avec une formation plus théorique en IUT qu'en STS, ils peuvent se réorienter vers des formations générales sans trop de difficultés et avec de bonnes chances de succès ce qui n'est pas le cas des sortants de STS titulaires en général d'un baccalauréat technologique.

Graphique 15

Le devenir d'une cohorte de candidats au baccalauréat quittant les classes terminales de l'enseignement secondaire général et technologique (candidats au baccalauréat en 1983, non-redoublant en 1983-1984)



N.B : La base des rectangles est proportionnelle aux effectifs du flux sortant des classes terminales de l'enseignement secondaire général et technologique dans les différentes séries.

Source : CEREQ - Observatoire EVA - Collection des Etudes n° 46 "Niveau IV de formation et baccalauréats professionnels", CEREQ - Avril 1989 (Enquête novembre 1986 auprès des inscrits au baccalauréat en 1983.

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4 - L'évolution des sorties nettes de l'enseignement supérieur (12)

Jusqu'au début des années 90, les générations susceptibles d'entrer dans l'enseignement supérieur se sont durablement maintenues à plus de 800 000 individus. Mais les progrès de la scolarisation et des poursuites d'études de plus en plus longues ont entraîné cependant une baisse régulière des sorties du système éducatif : en dix ans (1979-1989), l'ensemble des sorties nettes a baissé de presque 100 000 individus passant de 810 000 à 718 000 par an. Cette baisse provient des sorties de l'enseignement secondaire qui ont connue une chute régulière depuis le début des années 80, les flux de sortants étant inférieurs aujourd'hui de plus de 150 000 à ce qu'ils étaient en 1980.

C'est qu'en effet, les jeunes retardent de plus en plus leur entrée dans la vie active et cherchent à obtenir des diplômes de plus en plus élevés qui leur permettront de mieux commencer leur vie professionnelle. Les jeunes sont ainsi de plus en plus nombreux à accéder à des formations post-bac et ils en sortent de plus en plus qualifiés après des études de plus en plus longues. Ainsi en 1989, c'est presque 300 000 jeunes qui ont quitté l'enseignement supérieur soit plus d'un tiers d'une génération. La part des sorties de l'enseignement supérieur dans l'ensemble des sorties du système éducatif s'est ainsi élevé de 28 % au début de la dernière décennie à presque 40 % au début des années 90 dont près de 30 % de diplômés des niveaux I à III.

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(12) Cette partie s'appuie sur deux notes de la Direction de l'Evaluation et de la prospective (DEP) du Ministère de l'Education Nationale . "les sorties de l'enseignement supérieur de 1979 à 1989" par J. Chazal et S. Lemerle. "Les sorties du système éducatif en 1988 par S. Lemerle.

Tableau 4

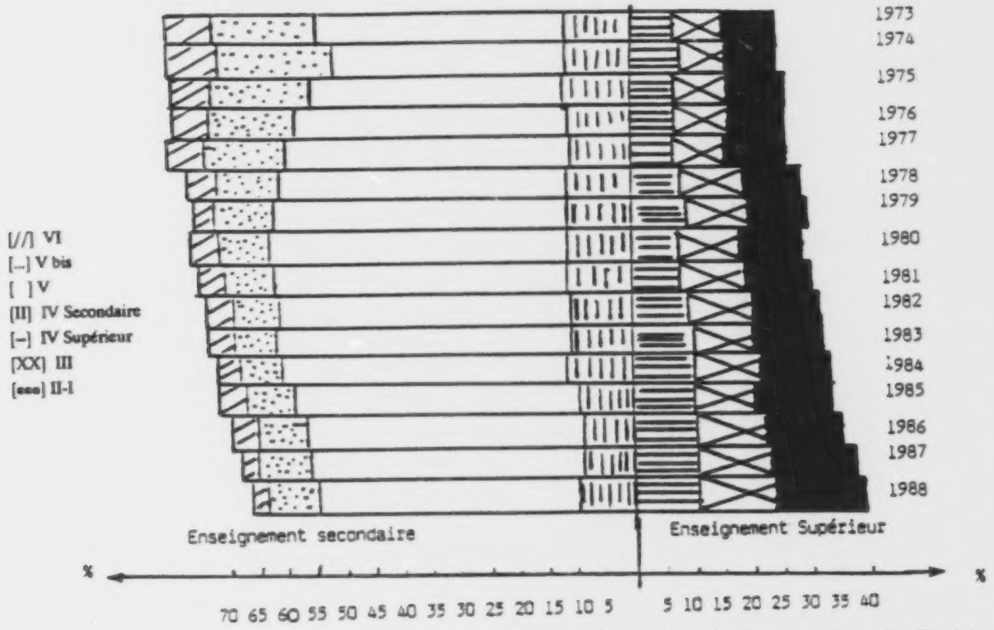
Les sorties nettes de l'enseignement supérieur

	1979	1984	1987	1988	1989
TOTAL DES SORTIES NETTES	**246 700**	**267 500**	**279 800**	**285 500**	**295 500**
TOTAL NIVEAUX I ET II	**78 800**	**94 100**	**102 900**	**104 800**	**112 900**
Ingénieurs	10 800	12 200	13 800	14 300	14 900
Autres Écoles	11 300	20 400	19 200	19 900	21 900
Disciplines générales de l'université	41 100	46 700	57 900	59 500	66 100
Médecine, pharmacie, dentaire	15 600	14 800	12 000	11 100	10 000
TOTAL NIVEAU III	**86 000**	**86 900**	**91 900**	**91 700**	**95 600**
Titulaires du BTS	17 300	23 300	30 800	34 000	37 100
dont : Agriculture	1 600	2 500	4 000	4 200	4 200
Titulaires du DUT	18 000	16 400	16 100	16 000	15 800
Écoles normales d'instituteurs	8 600	8 800	7 400	5 600	5 700
Disciplines générales de l'université	12 000	14 000	16 200	17 200	17 700
dont : sorties directes DEUG ou DEUST	6 500	5 100	2 800	3 400	2 300
Formations sanitaires et sociales	30 100	24 400	21 400	18 900	19 300
dont : formations paramédicales univ.	1 500	1 400	1 300	700	900
TOTAL NIVEAU IV SUPÉRIEUR	**81 900**	**86 500**	**85 000**	**89 000**	**87 000**
Sorties non diplômées de STS	12 000	16 500	22 200	27 400	30 800
dont : Agriculture	200	700	900	1 600	1 600
Sorties non diplômées des IUT	3 600	4 500	5 900	5 000	4 600
Abandons université disciplines générales	48 500	49 500	45 100	43 800	37 700
Capacités	10 000	11 900	8 600	9 000	9 700
Formations sanitaires et sociales	7 800	4 100	3 200	3 800	4 200
dont : formations paramédicales univ.	1 400	1 200	1 200	1 200	1 200

Source : MEN - DEP.

Graphique 16

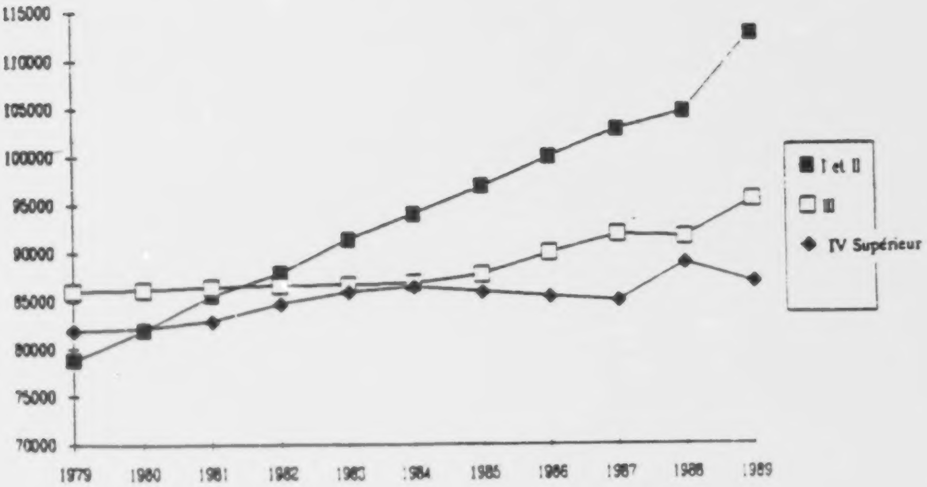
Evolution de la répartition des sorties du système éducatif par niveau de formation (en % du flux annuel des sorties)



Source : CEREQ - DEP - INSEE - Bilan Formation-Emploi.

Graphique 17

Evolution des sorties de l'enseignement supérieur par niveau



Source : Ministère de l'Education nationale - DEP.

Graphique 18

Les sorties du système éducatif
leurs conséquences sur les flux à former à l'horizon 2000

	En 1982		Rappel Constat 1988		Requises en l'an 2000	
BAC + 3 et au-delà	10 %		14 %		25 %	100 %
BAC + 2	10 %		12 %		28 %	
Niveau BAC	20 %		19 %			
CAP, BEP, 2ndc, 1ère	45 %		42 %		22 % 19 %	
Sans qualification	15 %		13 %		6 %	

Source : BIPE/HCEE 1987 et second rapport BIPE/HCEE 1991. L'actualisation des prévisions de 1987 en 1991 confirme les tendances mises à jour en 1987 avec un accroissement des sorties au niveau III et à l'inverse une baisse relative des sorties au niveau IV - Cf. BIPE. L'adaptation du système de formation aux emplois de l'an 2000.

A l'horizon 2000 c'est 45 % des flux de sortie qui devrait être constitué de diplômés de l'enseignement supérieur (Cf. Graphique 18). Mais surtout c'est la structure des sorties par niveau de qualification qui s'est modifiée : si les sorties non diplômées (niveau IV supérieur) des enseignements supérieurs sont demeurés à peu près stables ou en légère augmentation autour de 80 000 - 87 000 sortants, les sorties diplômées au niveau III (Bac + 2) et surtout I et II (diplômés à bac + 3 et au-delà) ont connu une croissance rapide pendant les années 80 : représentant moins de un tiers des sortants de l'enseignement supérieur en 1979, les diplômés de niveaux I-II en constituaient 38 % dix ans plus tard ; ce sont surtout les sorties diplômées des formations générales de l'université qui se sont accrues (hors disciplines médicales) avec une croissance de 61 % entre 1979 et 1989 mais également les sorties diplômées des autres écoles que celles d'ingénieurs - et en particulier des écoles de commerce et de gestion - dont les effectifs ont doublé en dix ans ; en revanche les disciplines médicales et pharmaceutiques soumises à un numerus clausus ont vu leurs flux de sorties chuter de près de 36 % depuis 1979.

4.1 - Evolution des sorties de l'enseignement supérieur aux niveaux I et II de formation par discipline et spécialité

En quinze ans, l'orientation des étudiants entre les disciplines d'enseignement supérieur s'est profondément transformée (Tableau 5).

Les formations en lettres et sciences humaines qui représentent en 1988 environ 27 % d'un flux de diplômés représentaient en 1971, 35 % du flux. Après le boom des années 60, ces formations ont donc vu une régression, puis stagnation de leurs effectifs tout au long de la décennie 70. La reprise s'est amorcée au début des années 80. Malgré quelques efforts, l'introduction des filières à finalité professionnelle s'est peu développée dans ce secteur (moins de 2 % de diplômés en maîtrise de sciences et techniques des spécialités linguistiques ou de communication etc..., et 7 % de diplômés dans la filières langues étrangères appliquées , LEA). La reprise s'est principalement opérée en fonction des perspectives nouvelles de recrutements d'enseignants depuis le début des années 1980 (13).

L'évolution des flux de diplômés issus des disciplines juridiques est particulièrement chaotique. Au début des années 70, la concurrence avec les nouvelles formations économiques et de gestion a entraîné une forte chute des orientations en droit... La reprise ne s'est opérée qu'au milieu des années 70, pour se poursuivre plus lentement depuis le début des années 80. En 1988, la proportion de diplômés en droit ne représente plus que 11 % du flux de diplômés contre 15 % en 1971.

C'est au début des années 70 que de nouvelles filières de formation professionnelle à dominante économique et de gestion ont été mises en place (14). Les effets sur les flux de diplômés se font sentir très fortement au milieu des années 70 avec un taux de progression de plus de 10 % par an entre 76 et 81 et de 5,3 % par an entre 81 et 86. Le développement des écoles de commerce et de gestion a suivi ce chemin avec une progression de près de 9,2 % entre 76 et 81 et de 14,7 % entre 81 et 86. La croissance dans ce secteur est redevenue plus modeste depuis la seconde moitié des années 80.

Entre 1971 et 1988, les effectifs de diplômés des écoles ou université en sciences économiques ou gestion ont presque triplé. Ils représentaient 10 % du flux des diplômés en 1971, ils représentent 19 % du flux en 1988.

La progression des flux de diplômés issus des écoles d'ingénieurs a été régulière tout au long de la période ; leurs diplômés représentent environ 15 % du flux des diplômés. Le développement des formations scientifiques universitaires a commencé au milieu des années 70, pour s'accélérer au début des années 80 (+ 5,5 % par an entre 76 et 81, + 7,3 % par an entre 81 et 86). Mais la répartition des diplômés entre les spécialités scientifiques s'est profondément modifiée. C'est au début des années 70, que les filières à finalité professionnelle ont été développées. Les

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(13) Le nombre de postes d'enseignants mis au concours du CAPES (en lettres, langues et arts) est passé de 810 en 1980 à 3 154 en 1986.

(14) Création des Maîtrises de Sciences de Gestion (MSG) et de la filière de formation Administration Economique et Sociale (AES).

Maîtrises de Sciences et Techniques (MST) et les Maîtrises d'Informatique Appliquée à la Gestion (MIAGE) qui ne représentaient rien au début des années 70 constituent 15 % du flux de diplômés universitaires scientifiques en 1981 et 20 % aujourd'hui. Dans le même temps, une forte proportion d'étudiants scientifiques ont déserté les filières traditionnelles des formations en mathématiques ou physique orientées vers l'enseignement et la recherche au profit des filières en sciences de l'ingénieur comme l'informatique ou l'électronique (qui représentent 12 % des flux en 81 et 16 % en 88). Contrairement à ce qui s'est passé en lettres et sciences humaines, la volonté politique de modifier la finalité des filières de formation scientifique pour les réorienter de l'enseignement vers une finalité professionnelle a été couronnée de succès ; au point que les pouvoirs publics aujourd'hui s'inquiètent des difficultés croissantes dans le recrutement des professeurs scientifiques ! Le nombre de postes ouverts au concours du CAPES scientifique était de 389 en 1980, il est passé à 1 328 en 1986. En 1989 sur 9 000 postes mis en concours, 31 % n'ont pas été pourvus faute de candidat, en 1990, sur 11 800 postes, c'est 24 % qui n'ont pas été pourvus (15).

Ce sont les formations médicales (médecine, pharmacie, odontologie) qui ont vu leur effectif décroître puis stagner avec l'instauration au début des années 1970 du "numerus clausus", dont les effets se sont fait sentir au milieu des années 70.

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(15) Le Monde du 21 septembre 1989 et du 18 juillet 1990. Il s'agit de l'ensemble des CAPES-CAPET-CAPEPS.

Tableau 5

Répartition par discipline du flux de diplômés issus des Universités et Écoles publiques ou privées reconnues par l'Etat (Niveau licence et plus) français plus étrangers (estimation du flux de sortie au niveau I-II par grands secteurs et disciplines)

	1971		1976		1981		1986		1988		Taux de crois. annuel 71 à 76	Taux de crois. annuel 76 à 81	Taux de crois. annuel 81 à 86	Taux de crois. annuel 86 à 89
	Eff	**%**	**Eff**	**%**	**Eff**	**%**	**Eff**	**%**	**Eff**	**%**				
Université														
Lettres et sciences humaines	21000	35	18760	29	19200	26	23030	26	25992	27	- 2 %	0,5 %	3,7 %	6,3 %
Droit (1)	8900	15	7040	11	8900	12	9460	11	10077	11	- 5 %	4,8 %	1,2 %	3,2 %
Sc Éco, gestion, AES	3800	6	4210	7	6780	9	8780	10	9122	10	1,6 %	1,6 %	5,3 %	1,9 %
Écoles de Haut enseignement commercial (2)	2300	4	2540	4	3940	5	7807	8	8498	9	2 %	9,2 %	14,7 %	4,4 %
Universités														
Sciences (3)	7500	12	7500	12	9810	14	13971	16	15147	16	0	5,5 %	7,3 %	4,2 %
Docteur en médec., pharmacie, odontologie (4)	7900	13	13900	22	12750	18	12317	14	11603	12	12 %	- 2 %	- 1 %	- 2,8 %
Éc. d'ingénieurs (5)	8860	15	9870	15	11220	16	13107	15	14276	15	2,2 %	2,6 %	3,2 %	4,4 %
TOTAL	**60340**	**100**	**63820**	**100**	**72600**	**100**	**88472**	**100**	**94715**	**100**	**1,1 %**	**2,6 %**	**4 %**	**3,4 %**

Source : SPRESE - MEN/DEP - Direction de l'Evaluation et de la Prospective.

Ne sont pas compris dans ce tableau, les étudiants issus des écoles d'arts et architecture, vétérinaire, éducation physique et sportive, et toutes les écoles privées non reconnues par l'Etat. Ne sont pas compris non plus les élèves des écoles normales supérieures, de notariat ou de sciences juridiques ou administratives ou diplômes d'université qui viennent en double compte avec les effectifs du tableau ci-dessus dans la presque totalité des cas. La prise en compte des populations ci-dessus conduit à l'existence d'environ 10 000 diplômés supplémentaires aux niveaux I et II. Une évaluation globale du SPRESE des sorties de l'enseignement supérieur aux niveaux I et II conduit à 72 500 diplômés en 1974 et 84 900 en 1981 (Note d'information du SPRESE n° 84-08 du 20 février 1984) et 97 691 en 1986.

(1) Y compris les diplômes universitaires de sciences politiques, mais non compris les diplômes d'instituts d'études politiques.

(2) L'effectif de 1981 comprend 760 diplômés (1 147 en 1986) d'écoles reconnues par l'Etat mais non habilitées à délivrer un diplôme revêtu du visa officiel. Ces écoles ne font pas partie du champ en 1971 et 1976. L'effectif 1986 comprend en outre 2 392 diplômes ou attestations délivrés par les écoles non reconnues par l'Etat.

(3) Diplômes universitaires traditionnels uniquement : les diplômes d'ingénieurs (ENSI ou filières universitaires d'ingénieurs) sont comptés avec les écoles d'ingénieurs.

(4) Les sorties en cours de deuxième cycle médical sont peu nombreuses et exclues de ce tableau.

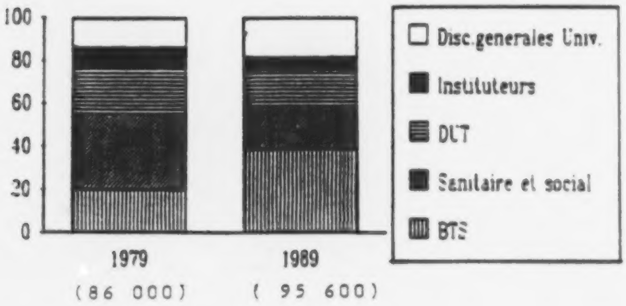
(5) Sauf diplômes d'ingénieurs du CNAM ou diplômes d'ingénieurs obtenus par la formation continue.

4.2 - L'évolution des sorties de l'enseignement supérieur au niveau III de formation

De même que dans les sorties aux niveaux I-II, les formations sanitaires et sociales se sont fortement réduites avec l'introduction du numerus clausus dans certaines formations (infirmières...) et dont les flux de sorties sont passés de 30 000 à 20 000 par an sur la période de 1979-1989. A l'inverse, les diplômés des sections de techniciens supérieurs (STS) se sont très rapidement accrus dans les sorties de niveau III : ils représentent presque deux sortants de niveau III sur cinq aujourd'hui contre à peine un sur cinq il y a dix ans.

Graphique 19

Répartition des sorties nettes de niveau III



Source : Ministère de l'Education nationale - DEP.

Ces formations ont bénéficié de la volonté générale de promouvoir l'enseignement technique tout en l'adaptant aux besoins de l'emploi mais également de la demande croissante des familles de ce type de formation ; en effet, dispensées dans les lycées avec des spécialisations variées et orientées vers un secteur professionnel précis, les STS sont bien réparties sur le territoire et permettent d'accéder à une formation post-bac proche du domicile familial ; cette préférence est en particulier très marquée pour les jeunes filles qui se concentrent sur quelques spécialités tertiaires, souvent dispensées dans les établissements privés (secrétariat, économie sociale et familiale, tourisme, mais également avec les jeunes gens en comptabilité, commerce).

Tableau 6

Evolution des diplômes délivrés BTS - DUT

	1970	1975	1980	1985	1988	TAUX DE CROISSANCE ANNUEL			
						1970-1975	1975-1980	1980-1985	1985-1988
BTS SECONDAIRE	5 041	4 264	6 456	10 553	12 981	- 3,3 %	+ 8,6 %	+ 10,3 %	+ 7,1 %
Dont :									
Fonderie-Mécanique	1 872	1 822	2 912	4 957	6 084	- 0,5 %	+ 9,8 %	+ 11,2 %	+ 7,1 %
Électricité-Électronique	1 440	1 050	1 596	2 895	3 568	- 6,1 %	+ 6,6 %	+ 12,6 %	+ 7,2 %
Chimie-Biologie	953	800	952	1 283	1 560	- 3,4 %	+ 3,5 %	+ 6,1 %	+ 6,7 %
BTS TERTIAIRE	5 422	7 262	10 986	19 004	26 777	+ 6,0 %	+ 8,6 %	+ 11,6 %	+ 12,1 %
Dont :									
Gestion-Comptabilité	900	925	1 932	4 162	5 468	+ 0,5 %	+ 15,9 %	+ 16,6 %	+ 9,5 %
Commerce	394	566	1 443	2 340	5 972	+ 7,5 %	+ 20,6 %	+ 10,1 %	+ 36,7 %
Secrétariat	3 686	4 295	5 458	7 347	8 202	+ 3,1 %	+ 4,9 %	+ 6,1 %	+ 3,7 %
Communication	279	539	809	1 538	2 186	+ 14,1 %	+ 8,5 %	+ 13,7 %	+ 12,4 %
Informatique-Gestion	135	89	162	1 533	2 558	- 8,0 %	+ 12,7 %	+ 56,7 %	+ 18,6 %
TOTAL BTS	**10 463**	**11 526**	**17 442**	**29 557**	**39 758**	**+ 2,0 %**	**+ 8,6 %**	**+ 11,1 %**	**+ 10,4 %**
DUT SECONDAIRE	4 290	8 452	10 960	13 302	14 557	+ 14,5 %	+ 5,3 %	+ 3,9 %	+ 3,1 %
Dont :									
Informatique	490	1 239	1 654	2 729	2 668	+ 20,4 %	+ 5,9 %	+ 10,5 %	- 0,7 %
Génie électrique-électronique et informatique industrielle	912	2 003	2831	3 209	3 541	+ 17,1 %	+ 7,2 %	+ 2,5 %	+ 3,4 %
Génie mécanique-productique	1 447	1 756	2061	2 328	2 547	+ 3,9 %	+ 3,3 %	+ 2,5 %	+ 3,0 %
Mesures physiques	233	681	933	1 115	1 395	+ 23,9 %	+ 6,5 %	+ 3,6 %	+ 7,8 %
Biologie	361	859	1 062	1 172	1 292	+ 18,9 %	+ 4,3 %	+ 2,0 %	+ 3,3 %
DUT TERTIAIRE	2 192	6 294	8 809	10 743	12 091	+ 23,5 %	+ 7,0 %	+ 4,0 %	+ 4,0 %
Dont :									
GEA	1 206	3 199	4 403	4 898	5 710	+ 21,5 %	+ 6,6 %	+ 2,2 %	+ 5,2 %
Techniques commercialisations	459	1 932	2 448	3 293	3 849	+ 33,3 %	+ 4,8 %	+ 6,1 %	+ 5,3 %
Carrières de l'information	302	578	772	1 026	1 117	+ 13,9 %	+ 6,0 %	+ 5,9 %	+ 2,9 %
TOTAL DUT	**6 482**	**14 746**	**19 769**	**24 045**	**26 648**	**+ 17,9 %**	**+ 6,0 %**	**+ 4,0 %**	**+ 3,5 %**

Source : Ministère de l'Education nationale - Direction de l'Evaluation et de la Prospective - DEP 5.

N.B. : Il s'agit des flux bruts de diplômés. Les sorties nettes sont très inférieures à ces flux dans la mesure où une forte proportion des diplômés poursuit des études après le BTS et le DUT.

La création des IUT au milieu des années 60 a été suivie de la croissance particulièrement rapide du flux de diplômés jusqu'au milieu des années 70, celle-ci revenant ensuite à un rythme plus modérée depuis : + 6 % par an entre 1975-1980, + 4 % par an depuis 1980 (16). Par contre coup, le flux de diplômés de STS a connu entre 1970-1975, un ralentissement, voire une baisse pour les formations industrielles (- 3,3 % par an entre 1970 et 1975) ; mais leur développement très rapide a repris dès la fin des années 70, avec un taux annuel de croissance de plus de 10 % depuis 1980. Ce sont les BTS tertiaires qui ont connu le développement le plus rapide (+ 11,6 % entre 1980-1985, + 12 % depuis 1985), certaines spécialités enregistrant même des taux encore plus élevés : + 16 % pour la gestion-comptabilité entre 1975-1985, + 20,6 % entre 1975-1980 et + 37 % entre 1985-1988 pour le BTS du commerce, + 56 % et + 19 % entre 1980-1985 et 1985-1988 pour le BTS informatique de gestion.

Pourtant le développement considérable des sections de techniciens supérieurs ne contribue pas autant qu'il le pourrait à la progression des sorties au niveau III qui n'ont connu qu'une croissance modeste sur la période ; ceci s'explique par la tendance toujours accrue à la prolongation des études, même après un diplôme à vocation professionnelle ; aujourd'hui 22 % des diplômés de STS poursuivent des études au-delà, proportion qui était quasi-nulle il y a dix ans. Il en va de même pour les diplômés d'IUT dont 35 à 40 % poursuivent des études. Du coup, l'essor considérable des diplômes technologiques au niveau III (DUT et surtout BTS) ne se traduit pas directement par une offre de travail accrue sur le marché du travail. Ceci a une influence et explique en partie la situation toujours favorable observée sur le marché du travail à l'issue de ces formations qu'ils s'agissent des conditions ou de la qualité de l'insertion professionnelle des jeunes diplômés de niveau III.

Cependant, toutes ces poursuites d'études ne vont pas se concrétiser par l'obtention d'un diplôme de niveau II ou I. Les sorties de formations générales de l'université au niveau III incluent ainsi des diplômés d'IUT ou de STS ayant échoué dans leur poursuite d'études universitaires et qui viennent accroître le flux de sortants des disciplines générales de l'université à ce niveau déjà constitué des sortants directs après un diplôme universitaire de premier cycle (DEUG essentiellement) et surtout des titulaires d'un DEUG ayant échoué en deuxième cycle universitaire. Ces sorties des formations universitaires sont d'importance modeste et ne représentant qu'une sortie sur cinq au niveau III.

5 - La place des femmes dans l'enseignement supérieur français

Tout à fait minoritaires au début de ce siècle, les scolarités féminines ont connu une progression régulière plus rapide que celles des garçons, avec un développement spectaculaire de l'accès à l'enseignement supérieur depuis une vingtaine d'années. Depuis la fin des années 70, les effectifs féminins dans l'enseignement supérieur dépassent les effectifs masculins, bien que leur croissance annuelle soit revenue à un rythme plus modéré : + 9,5 % jusqu'à 1939, + 7 % entre 1949 et 1974, + 3,2 % depuis.

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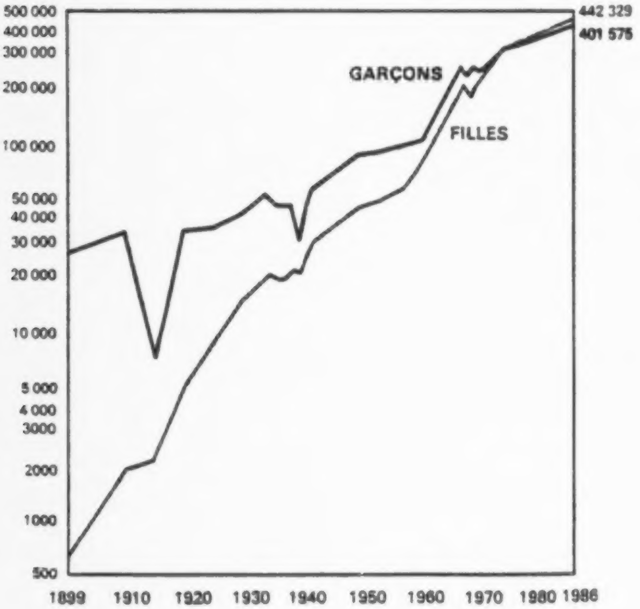
(16) Les récentes décisions des pouvoirs publics de relancer le développement des IUT à partir de 1991 vont à nouveau refaire croître les effectifs de diplômés dans les années 90 : création de 50 000 places supplémentaires en IUT en cinq ans (1991-1996).

Cette progression rapide de longue durée qui a permis aux femmes de rattraper leur retard de scolarisation n'a pas pour autant effacé les disparités d'orientation entre les garçons et les filles.

Graphique 20

Etudiants : les filles dépassent les garçons
Evolution des effectifs étudiants depuis 1900



Référence : Baudelot, Bénoliel, Cukrowicz, Establet : "Les étudiants, l'emploi, la crise". Paris, La Découverte, 1981.

Champ : Etudiants français seulement.

Source : INSEE - Donnée Sociales 1990.

Tableau 7

Part des femmes dans les effectifs étudiants par institutions et disciplines

Classes préparatoires aux grandes écoles (CPGE)	34,3 %								
* dont établissements privés	27,5 %								
STS	Agricole	Industriel	Tertiaire	TOTAL					
* dont établissements privés	23 %	13,5 %	69,2 %	51,4 % 60,4 %					
Universités	Droit	Sc. Éco	Lettres	Sciences	Médecine	Pharmacie	Divers	IUT	TOTAL
1er cycle	59,5 %	50 %	73,4 %	36,3 %	56 %	75 %	58 %	37,4 %	56,4 %
2ème cycle	54,7 %	47,3 %	70,9 %	16,2 %	46,5 %	65,7 %	44,6 %	–	54,6 %
3ème cycle	45,3 %	33,7 %	51,0 %	29,5 %	37,5 %	54,6 %	36 %	–	39,4 %
TOTAL	55,3 %	47,1 %	70,2 %	34,1 %	45,3 %	63,8 %	55,8 %	37,4 %	53,2 %
Écoles	Ingénieur	Commer. Gestion	Littéra.	Artistiq.	Carrières sociales	Carrières sanitaires			
	18,0 %	43,4 %	76,3 %	58,6 %	73,5 %	84,5 %			

Sources : Ministère de l'Education nationale. Repères et références statistiques sur les enseignements et la formation. Edition 1989.

Dès l'enseignement secondaire, les filles se cantonnent dans les filières littéraires et tertiaires et sont très minoritaires dans les filières scientifiques et industrielles. Du coup, leurs possibilités de choix dans les études supérieures se trouvent d'autant limitées même si des évolutions significatives apparaissent : développement des scolarités féminines dans les sections économiques (B) et tertiaires en comptabilité et commerce (G2 et G3) qui se traduit par l'accroissement rapide des effectifs féminins dans les études juridiques et économiques et dans l'enseignement technologique supérieur court tertiaire (IUT et STS tertiaires).

C'est que les modèles et représentations sociales forment ici un rôle majeur et cantonnent les femmes dans les filières qui débouchent sur des métiers traditionnellement féminins : enseignement, carrières para-médicales et sociales, documentation, communication.

La conséquence c'est qu'elles font des études moins longues que les hommes ; même dans les études universitaires y compris littéraires, où elles sont globalement plus nombreuses que les hommes, elles sont minoritaires dans les sorties au niveau du troisième cycle.

Tableau 8

Evolution des flux de sorties nettes des enseignements supérieurs par sexe

	1983		1986		1987		1988		1989	
NIVEAU IV SUPÉRIEUR	73 591		76 910		75 295				87 000	
Hommes	26,2 %	38,8 %	25,9 %	39,4 %	25,5 %	40,1 %			28,2 %	43,7 %
Femmes	34,1 %	61,2 %	32,4 %	60,6 %	31,8 %	59,9 %			30,5 %	56,3 %
TOTAL		100 %		100 %		100 %				100 %
NIVEAU III	76 900		86 150		84 879				95 600	
Hommes	27,6 %	39,1 %	29,6 %	40,2 %	29,7 %	41,4 %			29,2 %	41,2 %
Femmes	35,4 %	60,9 %	35,8 %	59,8 %	35,1 %	58,6 %			35,0 %	58,8 %
TOTAL		100 %		100 %		100 %				100 %
NIVEAUX I - II	90 600		97 691		99 796				112 900	
Hommes	46,2 %	55,5 %	44,5 %	53,2 %	44,8 %	53,1 %			42,6 %	50,9 %
Femmes	30,5 %	44,5 %	31,8 %	46,8 %	33,1 %	46,9 %			34,5 %	49,1 %
TOTAL		100 %		100 %		100 %				100 %
TOTAL Sorties nettes des enseignements supérieurs (niveaux I à IV)	241 091		260 751		259 970				295 500	
Hommes	100 %	45,2 %	100 %	44,9 %	100 %	45,5 %			100 %	45,7 %
Femmes	100 %	54,8 %	100 %	55,1 %	100 %	54,5 %			100 %	54,3 %
TOTAL		100 %		100 %		100 %				100 %

N.B. : Pour chacune des années, la première colonne donne la structure par niveaux des sorties masculines et féminines. La seconde colonne donne la proportion des hommes et des femmes dans les sorties aux différents niveaux de formation.

Sources : Ministère de l'Education nationale - DEP 5.
INSEE - CEREQ - DEP. Bilans Formation-Emploi 1983, 1986, 1987.

La structure des flux de sorties nettes des enseignements supérieurs montre ces différences d'orientation et de comportement entre les hommes et les femmes dans les études supérieures. Alors que les femmes sont majoritaires dans l'ensemble des sorties de l'enseignement supérieur (54 %), elles sont minoritaires dans les sorties au niveau I-II (49 %), ces proportions étant respectivement de 46 % et 51 % pour les hommes. A l'inverse, elles sont largement majoritaires aux niveaux inférieurs (IV et III).

Le problème des abandons de l'enseignement supérieur sans y avoir obtenu un diplôme est donc encore plus important dans les scolarités féminines que dans les scolarités masculines : plus de 30 % des sorties féminines se font au niveau IV contre 28 % seulement des sorties masculines. Cela provient en grande partie de leur orientation vers les filières les moins qualifiantes des formations non-universitaires : peu représentées dans les formations conduisant à un diplôme de niveau II ou I (écoles d'ingénieurs et autres écoles) (17), elles sont majoritaires dans les formations de niveau III (formations sanitaires et sociales, formations des instituteurs) et surtout dans les sections de techniciens supérieurs tertiaires où le taux d'échec est le plus élevé : 35 % des sorties féminines se sont faites au niveau III contre moins de 30 % des sorties masculines.

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(17) 18 % seulement des sorties féminines non-universitaires se sont faites au niveau I-II contre 39 % des sorties masculines en 1989. Cf. DEP : "Les sorties de l'enseignement supérieur de 1979 à 1989". Op. cit.

Deuxième partie

Les conditions d'insertion professionnelle des diplômés de l'enseignement supérieur

1 - Depuis plus de 20 ans, les diplômés de l'enseignement supérieur ont échappé à la crise de l'emploi

La montée du chômage des diplômés de l'enseignement supérieur et leur déclassement professionnel sont régulièrement annoncés (18). Sur le premier point, on s'est toujours trompé. Les jeunes ou les adultes diplômés ont très bien résisté à la crise de l'emploi qui s'est accentuée au cours des années 80. Que l'on regarde la situation des jeunes (15-24 ans) par rapport à celle des adultes (paragraphe 1.2) ou l'évolution du taux de chômage à la sortie du système éducatif par niveau de diplôme (paragraphe 1.3), on aboutit aux mêmes conclusions. Le chômage a frappé très durement les jeunes sortant de l'enseignement secondaire et les écarts se sont accrus entre les diplômés de l'enseignement supérieur et les autres jeunes.

Pourtant l'évolution démographique et la croissance de la poursuite d'étude aurait pu avantager les jeunes sortant de l'enseignement secondaire par rapport à ceux sortant de l'enseignement supérieur. La population **active** des 15-24 ans issue de l'enseignement secondaire est en décroissance très rapide depuis le milieu des années 80, ce qui n'est pas le cas à l'issue de l'enseignement supérieur (paragraphe 1.1).

Plusieurs raisons concourent à la bonne tenue de l'emploi des diplômés. On examinera la principale qui résulte du dynamisme du recrutement des ingénieurs et cadres supérieurs ainsi que celui des professions intermédiaires depuis 20 ans. Le système d'enseignement supérieur a su se transformer pour suivre l'évolution démographique des emplois de niveau supérieur (paragraphe 1.4).

1.1 - **La population active des 15-24 ans sera en décroissance constante jusqu'à l'an 2000 (Graphique 21).**

La population des jeunes de 15-24 ans est demeurée stable des années 75 à 90 : environ 8,5 millions. Les effets de la baisse démographique commence à se faire sentir. On devrait atteindre 7,5 millions de jeunes de 15 à 24 ans en l'an 2000.

L'accentuation de la poursuite d'études depuis le début des années 80 vient se superposer aux effets démographiques pour accélérer la baisse de la **population active** des jeunes de 15 à 24 ans.

Les effets sont peu perceptibles entre 1975 à 1983 : on passe de 4,1 millions de jeunes actifs (y compris militaire du contingent) à 3,8 millions.

Entre 1984 et 1990, la population active des 15-24 ans perd plus de cent mille jeunes par an sous le seul effet de la poursuite d'études : on passe de 3,7 en 1984 à 3,1 million de jeunes actifs en 1990.

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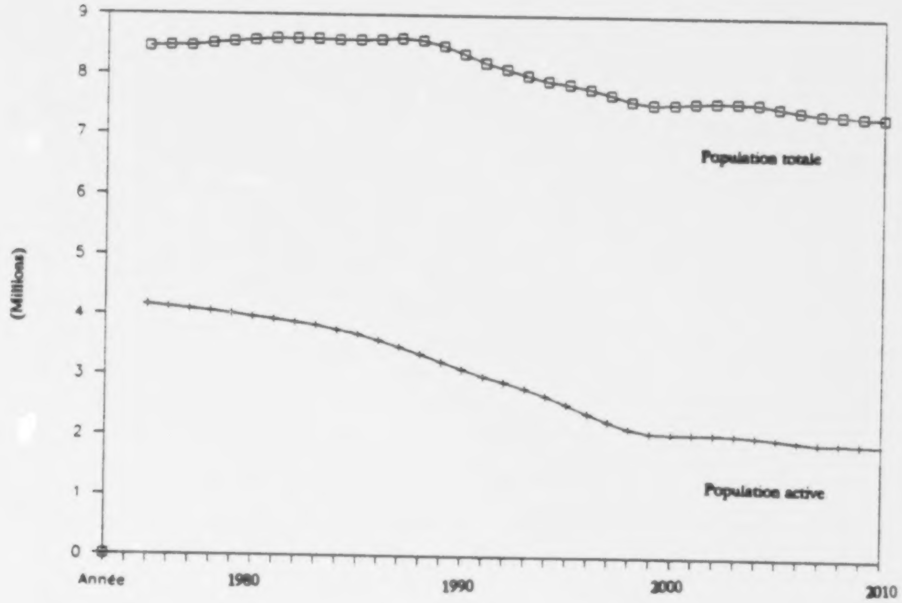
(18) "Perspective d'emploi pour les diplômes de l'enseignement supérieur", OCDE - Paris, août 1981.

Graphique 21

Evolution démographique de la population active des 15-24 ans (Projection jusqu'en 2010)



Cette décroissance va s'accentuer jusqu'en 1997 puisque l'effet de la poursuite d'études va se cumuler avec celui de la baisse démographique. La **population active** des 15 à 24 ans devrait se stabiliser autour de 2,1 millions vers l'an 2000 (19).

La composition de cette population active se transforme. En 1975, les titulaires d'un diplôme de niveau égal ou supérieur au baccalauréat représentait 14 % des actifs de 15 à 24 ans. Ils en représentent 17 % en 1982 (20). Cette tendance se poursuit. Du seul point de vue démographique et niveau de formation, les jeunes actifs de 15-24 ans sont en position plus favorable au début des années 90 que dix ans plus tôt.

1.2 - Le chômage pèse le plus fortement sur les jeunes et plus particulièrement les femmes ou les non-diplômés de l'enseignement secondaire.

La décroissance continue du chômage depuis le début des années 70 s'est opérée en conservant la hiérarchie des populations selon l'âge, le sexe et le niveau de diplôme.

Le chômage féminin de la population active est presque le double du chômage masculin (INSEE données sociales 90 page 44, figure 22). Le chômage des moins de 25 ans est deux à trois fois plus élevé que celui des adultes (idem figure 23).

Mais les écarts de chômage se sont creusés selon le niveau de diplôme.

En 1975, le taux de chômage des non-diplômés dans la population active (homme 4,2 %, Femme 8 %) est le double de celui des diplômés de l'enseignement supérieur (niveau de diplôme I, II : Homme 2 %, Femme 4,3 %).

En 1987, cet écart est passé de 1 à 5 (Cf. graphique 24).

Ces traits structurels de la population adulte se retrouve au niveau des plus jeunes, mais avec quelques distinctions.

L'écart des taux de chômage entre hommes et femmes de moins de 25 ans est moins fort que celui entre les adultes. Ceci signifie que les difficultés que rencontrent les femmes sur le marché du travail perdurent bien au-delà de 25 ans contrairement aux hommes.

Le niveau de diplôme n'opère pas de la même façon sur le chômage par sexe. Chez les hommes de moins de 25 ans, c'est surtout l'absence de diplôme à la sortie de l'école qui est très pénalisante. Dès l'obtention d'un diplôme de niveau V (CAP, BEP), les écarts de taux de chômage sont réduits (Cf. Graphique 25).

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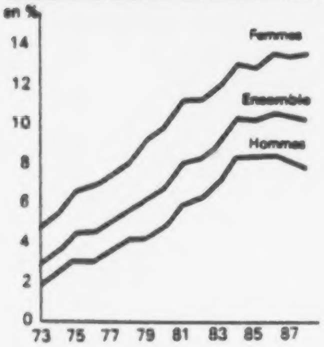
(19) INSEE Projection de population scolaire et population active des 15-24 ans. INSEE. T. Lacroix - Note du 23 août 1989

(20) "Population active, emploi et chômage depuis 30 ans". Les Collections de l'INSEE D - 123 page 45

Graphique 22

Taux de chômage par sexe

Taux de chômage au sens du BIT* au 31 décembre, corrigé des variations saisonnières

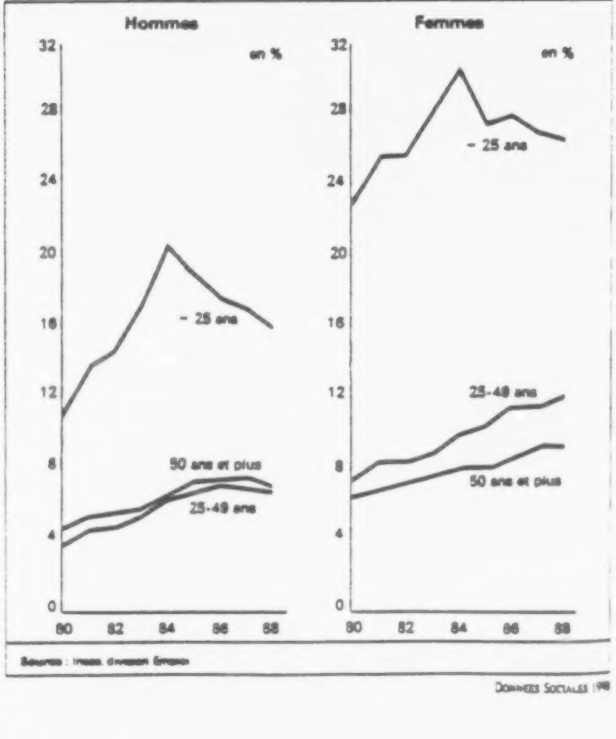


Source : Insee, division Emploi

DONNÉES SOCIALES 1990

Graphique 23

Taux de chômage par sexe et âge



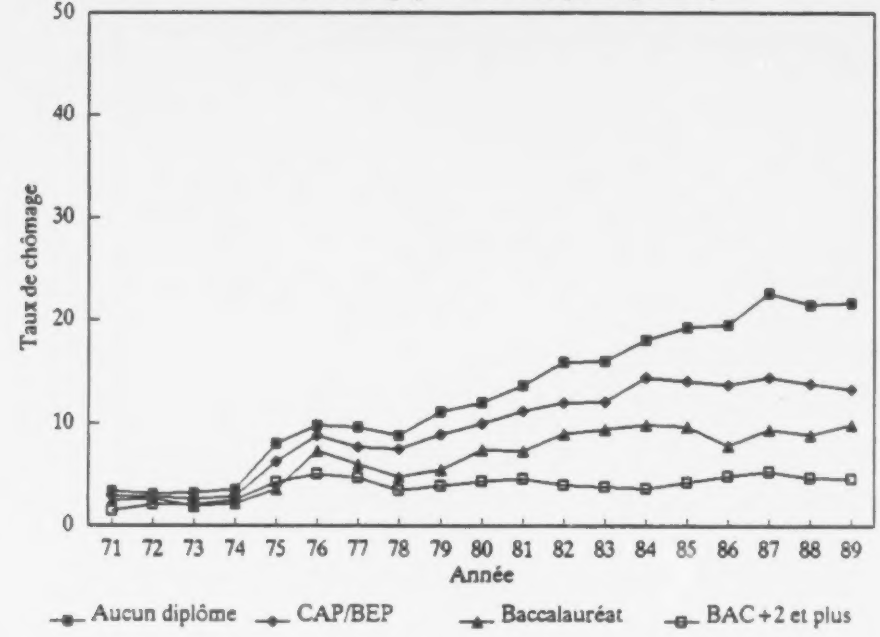
Source : Insee, division Emploi

DONNÉES SOCIALES 1990

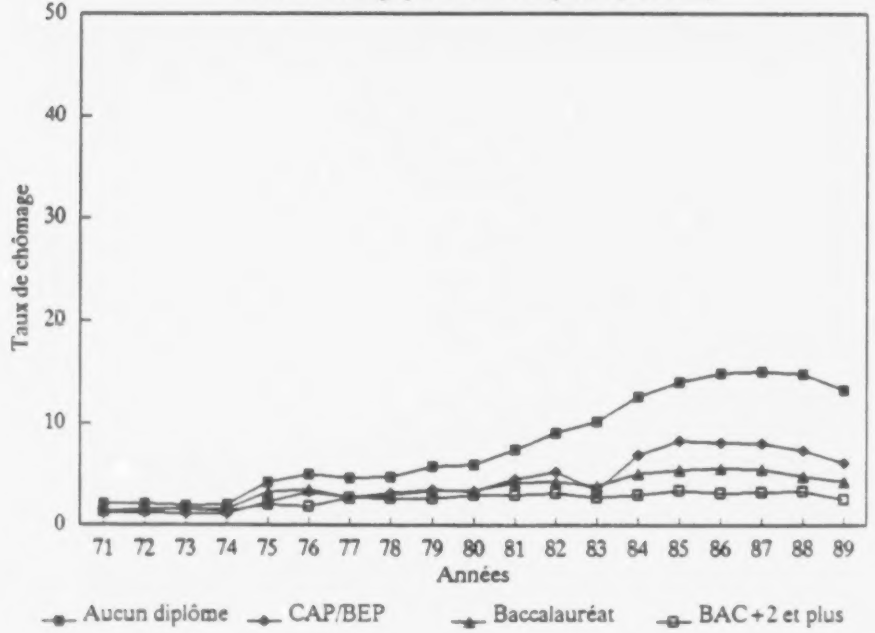
Graphique 24

Taux de chômage de la population active par sexe et niveau de diplôme

Taux de chômage par niveau de diplôme (femmes)



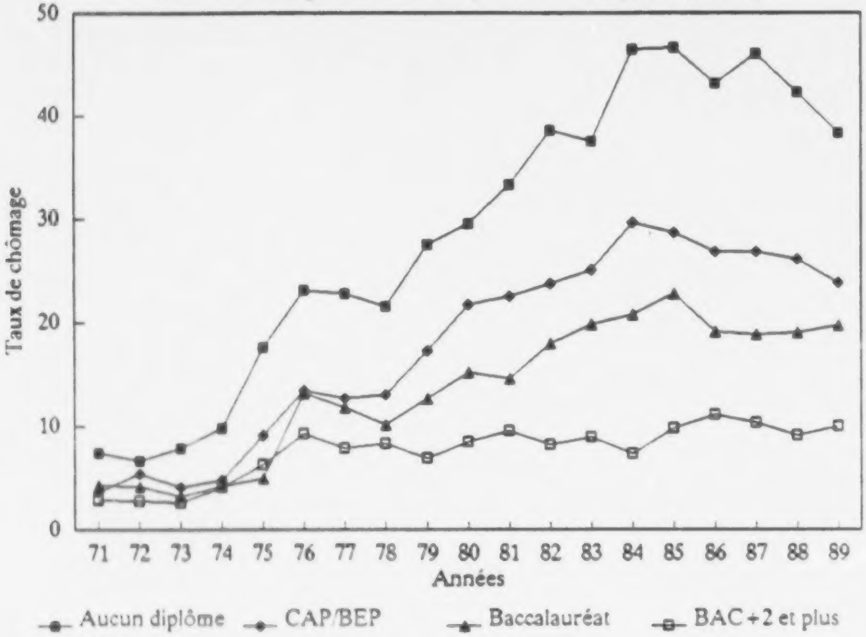
Taux de chômage par niveau de diplôme (hommes)



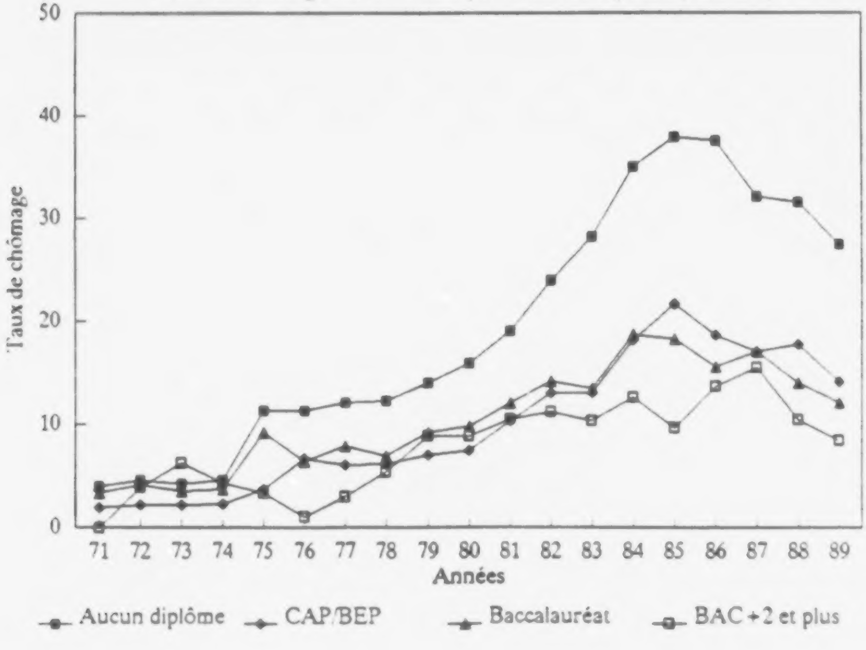
Graphique 25

Taux de chômage des 15-24 ans par sexe et niveau de diplôme

Taux de chômage des 15–24 ans par niveau de diplôme (femmes)



Taux de chômage des 15–24ans par niveau de diplôme (hommes)



Chez les femmes de moins de 25 ans, la rupture se situe plus au niveau du baccalauréat. L'absence de diplôme à la sortie de l'enseignement entraîne un niveau record du chômage féminin, mais les titulaires du seul diplôme de niveau V (CAP, BEP) sont dans une situation délicate. L'amélioration s'opère à partir de l'obtention du baccalauréat ou d'un diplôme de niveau supérieur.

1.3 - La crise de l'emploi a considérablement accentuée les écarts entre taux de chômage des jeunes par niveau de diplôme à la sortie du système éducatif. Seuls les diplômés de l'enseignement supérieur sont épargnés (graphique 26).

L'analyse des conditions d'insertion professionnelle des jeunes à leur sortie du système éducatif viennent confirmer ce qu'on vient de voir sur l'étude des populations actives.

La crise de l'emploi qui s'est développé au cours des années 70 ont touché en premier les jeunes sortis sans diplôme de l'enseignement secondaire. Puis les titulaires d'un diplôme de niveau V (CAP, BEP) ont été à leur tour concernés au cours des années 80.

Sept mois après la sortie du système éducatif, on atteint en 1983-1984, des taux de chômage de près de 50 % pour les femmes sortant de l'enseignement secondaire avant le baccalauréat.

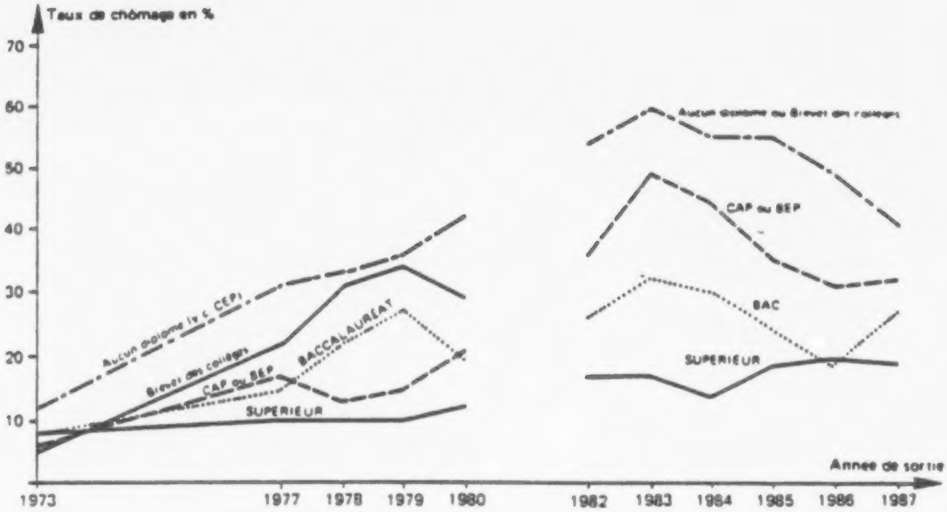
La chute du chômage qui suivie sur la fin des années 70 résulte principalement de l'introduction massive des "mesures jeunes" et du développement des emplois précaires (intérim, contrat à durée déterminée CDD).

Rien de tout cela n'a vraiment concerné les jeunes sortant au-delà du baccalauréat. Le taux de chômage des sortants de l'enseignement supérieur demeure inférieur à 15 %, sauf au cours d'une brève période (1984-1986) où il atteint 20 % pour les femmes.

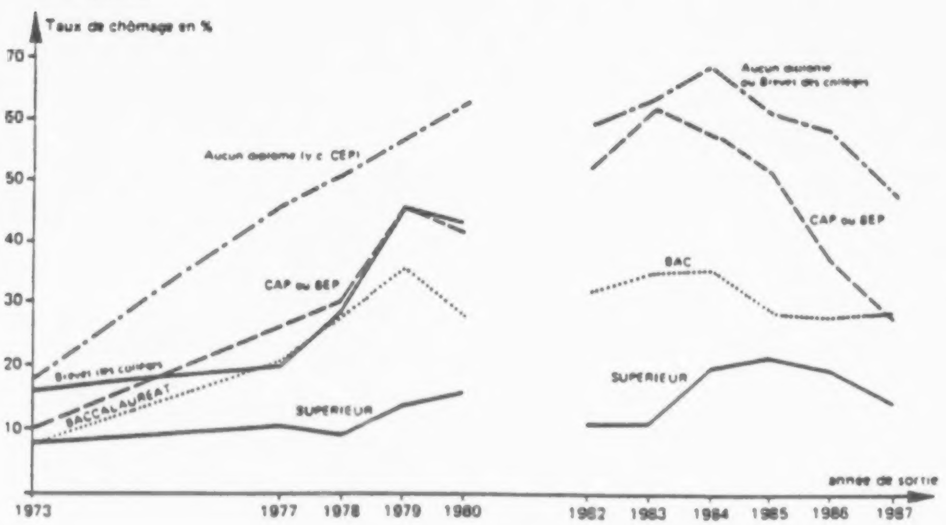
Graphique 2.6

Evolution du taux de chômage neuf mois après la sortie du système éducatif selon le niveau de diplôme

A – HOMMES



B – FEMMES



Source : Enquête Emploi, in Bilan Formation-Emploi - 1987.

* Le "taux de chômage" est le rapport du nombre des chômeurs à l'effectif des actifs (actifs occupés, chômeurs, TUC et SIVP). Les apprentis ne sont pas comptabilisés ici parmi les actifs. A partir de 1982, les diplômés du brevet des collèges sont regroupés avec les jeunes sans aucun diplôme. Les données des bilans 1974-1976 ne sont pas disponibles.

2 - *Les premières années de vie active des diplômés de l'enseignement supérieur*

Les enquêtes de cheminement professionnel du CEREQ (Cf. Annexe 1) fournissent une information détaillée sur les trois premières années de vie active des diplômés de l'enseignement supérieur. La taille des échantillons est suffisante pour analyser les conditions d'insertion professionnelle par diplôme et spécialité de formation.

L'analyse montre qu'il existe une triple hiérarchie des conditions d'entrée dans la vie active selon le niveau du diplôme, les institutions d'enseignement supérieur (écoles ou universités) et les spécialités de formation.

Trois indicateurs rendent compte de ces hiérarchies (Cf. Définitions et Tableau en Annexe 2) :

- La rapidité d'accès à l'emploi mesurée par la proportion de jeunes qui accèdent à leur premier emploi en moins de six mois ou un an.
- La proportion de jeunes ayant connu une durée totale de chômage supérieure à un an au cours des trois années suivant la sortie du système éducatif.
- La proportion de jeunes ayant accédé directement à un premier emploi stable : (contrat à durée indéterminée (CDI ou fonctionnaire).

Les diplômés de l'enseignement supérieur (niveaux I à III) sortis en 1984 et suivi jusqu'en 1987 ont accédé rapidement à l'emploi : neuf étudiants sur dix ont trouvé leur premier emploi en moins d'un an. 59 % des diplômés accèdent directement à un emploi stable (contrat à durée indéterminée, fonctionnaire...) et 22 % le trouvent en moins de deux ans et demi après passage par une situation précaire (contrat à durée déterminée, auxiliaire ou vacataire du secteur public...).

Ce constat optimiste ne doit pas cacher l'existence des difficultés d'insertion professionnelle pour un petit nombre de diplômés : 6,7 % des diplômés ont connu une durée totale de chômage supérieure à un an au cours des trois années suivant la sortie d'études (entre juin 1984 et mars 1987).

2.1 - **L'accès à l'emploi est plus rapide à l'issue des écoles ou instituts qu'après l'université (Tableau en annexe 2).**

L'accès à l'emploi est plus rapide avec un brevet de technicien supérieur (BTS) qu'un diplôme universitaire de technologie (DUT). En moins de six mois, deux tiers des titulaires d'un DUT et trois quarts des titulaires d'un BTS sont en emploi. Cet écart se réduit rapidement puisqu'en moins d'un an, 94 % environ des diplômés d'un BTS tertiaire ont pris leur premier emploi, 91 % après un BTS industriel, 90 % après un DUT tertiaire et 88 % après un DUT industriel. Mais les écarts peuvent être beaucoup plus marqués entre les spécialités de formation où les durées longues de recherche d'emploi présentent des différences significatives.

C'est après une école d'ingénieurs que l'accès à l'emploi s'effectue le plus rapidement : 80 % des titulaires d'un diplôme d'ingénieur sont en emploi en moins de six mois et 95 % en moins d'un an. Mais les écarts sont forts entre les disciplines puisque 84 % des diplômés en sciences exactes (mécanique, électricité, électronique, informatique...) sont en emploi en moins de six mois, contre 70 % des chimistes et 56 % des titulaires d'un diplôme en sciences de la nature et de la vie (biologie, biochimie, secteur agricole, géologie...). Ces écarts se réduisent au bout d'un an pour atteindre respectivement 96 %, 93 % et 85 %.

La rapidité d'accès à l'emploi caractérise également les diplômés des grandes écoles de commerce et des ESCAE : trois quarts des diplômés sont en emploi en moins de six mois et 94 % en moins d'un an. Les autres écoles de commerce (reconnues par l'Etat) suivent de près avec 70 % de diplômés placés en moins de six mois et 92 % en moins d'un an.

Conformément aux résultats des précédentes enquêtes menées depuis près de dix ans, plus de 80 % des diplômés universitaires sont en emploi en moins d'un an.

L'accès à l'emploi des diplômés universitaires commence avant l'obtention du diplôme ou concours terminal. La proportion de jeunes en emploi avant le dernier diplôme ou concours varie de 14 % (deuxième cycle juridique) à 43 % (DEA ou DESS littéraire). Malgré cette forte anticipation sur la fin des études, la proportion cumulée de jeunes en emploi n'atteint que 85 % en moins d'un an. L'accès à l'emploi des universitaires est donc beaucoup plus étalé dans le temps que celui des diplômés d'écoles.

2.2 - L'accès à un premier emploi stable et le passage par le chômage révèlent une forte hiérarchie entre le niveau de diplôme et les spécialités de formation (Graphique 27 et Tableau en annexe 2).

La proportion de diplômés qui accèdent directement à un premier emploi stable (contrat à durée indéterminée, fonctionnaire) et la proportion de ceux qui ont connu une durée totale de chômage supérieure à un an au cours des trois premières années de vie active sont deux indicateurs qui hiérarchisent les diplômes et spécialités de formation selon une certaine qualité de l'insertion professionnelle.

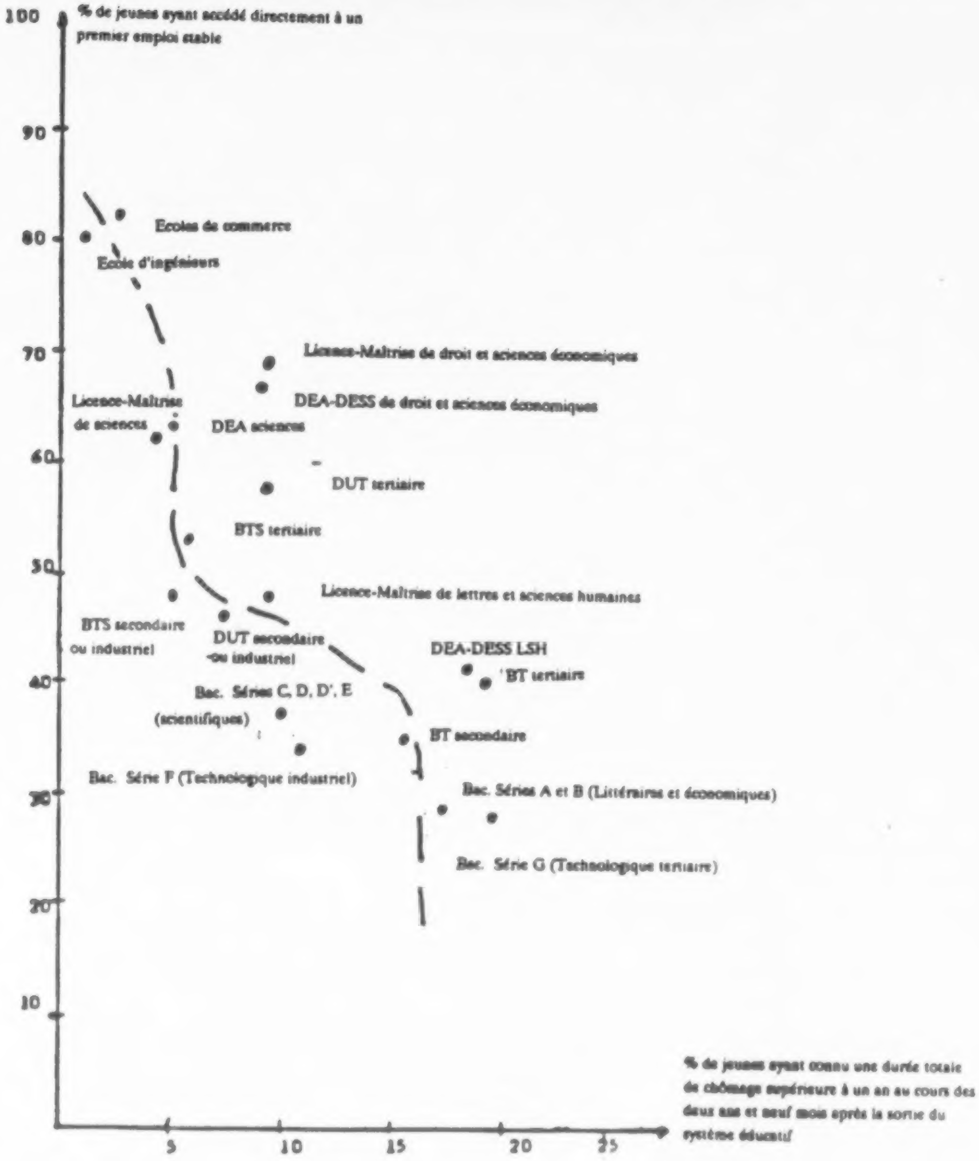
Le premier indicateur classe les niveaux de diplômes :

Entre 30 et 40 % des jeunes de niveau IV (baccalauréat) accèdent directement à un premier emploi stable. Sont aussi dans ce cas un jeune sur deux au niveau III et deux jeunes sur trois titulaires d'un diplôme supérieur ou égal à la licence (niveaux I et II). En outre, l'abandon des premiers emplois précaires pour prendre un emploi stable est beaucoup plus rapide aux niveaux I à III qu'au niveau IV.

L'indicateur de chômage confirme le classement par niveau de diplôme. Le chômage avant le premier emploi et le chômage consécutif à la sortie de l'emploi précaire sont beaucoup plus fréquents pour les jeunes de niveau IV que pour ceux des niveaux I à III ; et la durée totale en est plus longue.

Graphique 27

Diplômes et spécialités selon la proportion de jeunes accèdent directement à un emploi stable et la proportion de jeunes ayant connu une durée totale de chômage supérieure à un an



Source : CEREQ - Observatoire EVA.

Au cours des trois premières années de vie active, 16 % des sortants au niveau IV (avec ou sans le baccalauréat) ont connu une durée totale de chômage de plus d'un an. Aux niveaux I à III, les proportions sont moindres : 6 % après un BTS, 9 % après un DUT, un deuxième ou troisième cycle universitaire, 1,4 % après une école d'ingénieurs, 2,4 % après une école de commerce reconnue par l'Etat.

Mais le niveau de formation ne suffit pas à rendre compte de la plus ou moins grande facilité d'accès au marché du travail. L'indicateur de chômage montre qu'à tous les niveaux de diplômes, les conditions d'accès au marché du travail sont meilleurs à l'issue des formations industrielles ou scientifiques que des formations tertiaires.

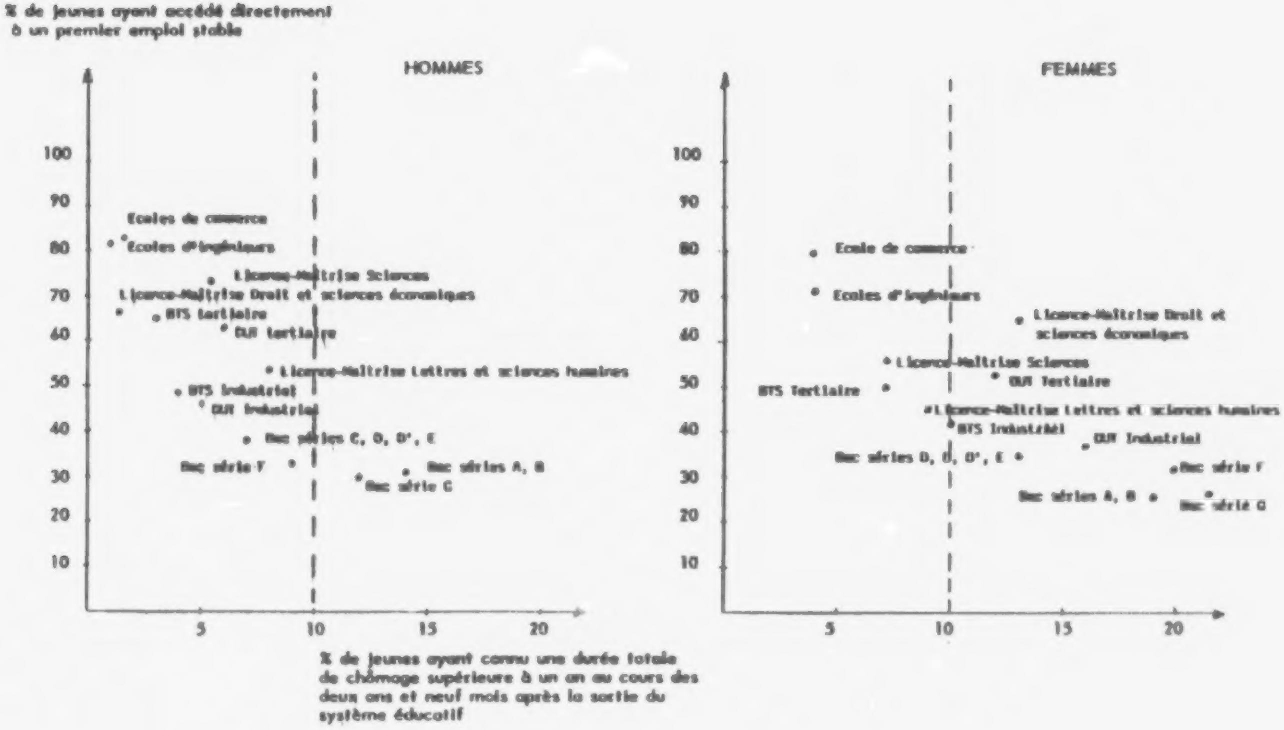
A l'issue des **formations industrielles ou scientifiques**, les jeunes de niveau IV (baccalauréat : séries F, C, D, D', E) accèdent directement à un emploi stable dans les mêmes proportions, qu'ils soient titulaires ou non d'un baccalauréat (entre 30 et 40 %). Au niveau III (BTS-DUT), entre 40 et 50 % des jeunes accèdent directement à un emploi stable. A partir du deuxième cycle universitaire de sciences et surtout des écoles d'ingénieurs, l'accès direct à l'emploi stable domine (respectivement 63 et 80 %). Dans tous les cas, le passage par le chômage pendant plus d'un an au cours des trois premières années est peu développé, quel que soit le niveau de formation.

A l'issue des **formations tertiaires**, 30 % seulement des jeunes de niveau IV (séries G, A, B) accèdent directement à un premier emploi stable. Le passage par le chômage est fréquent : environ 20 % des jeunes de niveau IV ont connu une durée totale de chômage supérieure à un an au cours de leurs trois premières années de vie active. La rupture est forte avec les diplômés du niveau III. Entre 50 et 60 % d'entre eux accèdent directement à un premier emploi stable, réduisant d'autant l'intensité du passage par le chômage.

Au-delà du niveau III, la passage par le chômage diminue fortement malgré des conditions d'accès à l'emploi très contrastées selon les disciplines. Les littéraires, qui s'orientent en majorité vers la fonction enseignante, commencent fréquemment leur activité en cours d'études sur les emplois de non-titulaires du secteur public ; ceci explique la forte proportion de premiers emplois dits "précaires". En droit, sciences économiques ou gestion, deux tiers des jeunes universitaires et quatre cinquièmes des diplômés d'écoles de commerce accèdent directement à un emploi stable.

Graphique 28

Idem Graphique 27 par sexe



Source : Observatoire des Entrées dans la Vie Active du CEREQ (Diplômés 1983 ou 1984, Enquêtes 1986 ou 1987).

2.3 - Plus de passage par le chômage pour les jeunes filles, quelle que soit la formation (graphique 28).

Les jeunes filles de niveau IV ont plus de difficultés que les garçons à intégrer directement un emploi stable (34 % des garçons y arrivent, pour 29 % des filles), mais les conséquences de la précarité des emplois sont beaucoup plus grandes pour les filles que pour les garçons ; 19,4 % d'entre elles ont connu une durée totale de chômage supérieure à un an au cours des trois premières années de vie active, contre seulement 11 % des garçons. Il en est de même aux niveaux supérieurs (I à III). On rejoint les constats faits à propos de l'étude de la population active : les difficultés d'insertion professionnelle sont surmontés beaucoup plus vite par les garçons que par les filles.

L'écart entre garçons et filles ne s'atténue qu'à l'issue des spécialités de formation les plus valorisées (informatique, sciences exactes en général) où les conditions d'insertion professionnelle sont très voisines.

2.4 - Des déséquilibres entre les disciplines et spécialités de l'enseignement supérieur dans les conditions d'accès à l'emploi.

A partir du baccalauréat s'instaure une grande diversité des disciplines et spécialités de formation. Par-delà les diplômes et les institutions, il existe actuellement des spécialités de formation scientifiques favorables aux débouchés professionnels et d'autre pas. Il en est de même parmi les spécialités tertiaires.

2.4.1 - Les conditions d'accès à l'emploi à l'issue des formations industrielles ou scientifiques

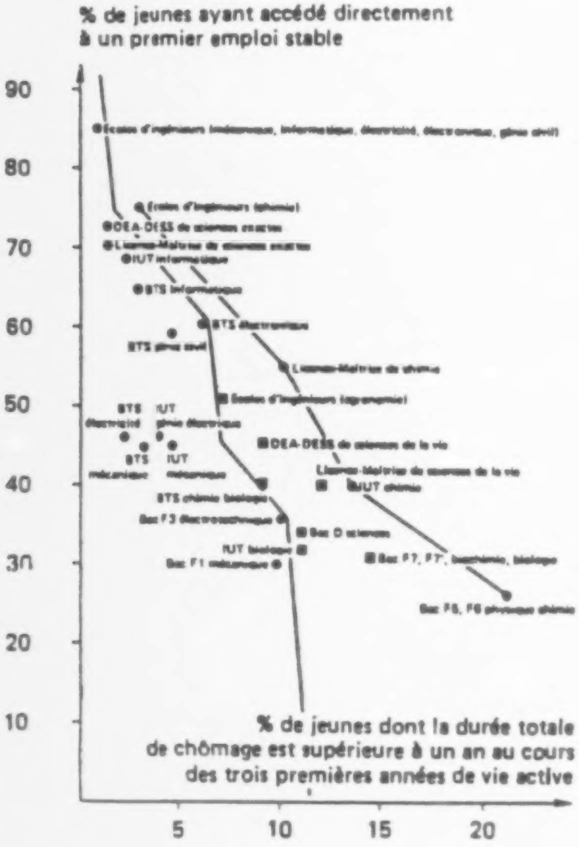
Trois blocs principaux se dessinent dans l'ensemble des formations scientifiques. Ils sont caractérisés par des conditions d'insertion professionnelle différentes (Graphique 29).

a) Les sciences exactes (mathématiques, physique, mécanique, informatique, électricité, électronique, électrotechnique, etc...) rassemblent le flux le plus important de jeunes sortant des filières scientifiques aux différents niveaux de formation. Les conditions d'insertion professionnelle y sont les meilleures, allant de pair avec les niveaux de rémunération des emplois occupés. La proportion de jeunes dont la durée totale de chômage est supérieure à un an au cours des trois premières années de vie active, y est plus faible : elle est inférieure à 10 % au niveau IV, 5 % au niveau III et 2 % au niveau I ou II.

b) Les sciences de la nature et de la vie (biologie, biochimie, agronomie, secteur agricole...) forment un deuxième bloc de formation où le flux de jeunes formés est très élevé. Malgré l'incontestable réussite de quelques petites filières de formation du niveau III ou plus, l'insertion professionnelle à l'issue de ces spécialités s'effectue mal depuis plus d'une décennie.

Graphique 29

Diplômes et spécialités selon la proportion de jeunes accédant directement à un emploi stable et la proportion de jeunes ayant connu une durée totale de chômage supérieure à un an (Spécialités de formations industrielles ou scientifiques)



Source : CEREQ - Observatoire EVA

Dubois et alii - Document de Travail n° 61 - CEREQ

Au niveau IV, l'écart est peu marqué avec les autres filières scientifiques, mais il se creuse dès le niveau III et plus encore aux niveaux supérieurs I et II ; moins de 40 % des diplômés accèdent à un premier emploi stable au niveau III ou avec un deuxième cycle universitaire, et de l'ordre de 50 % environ avec un troisième cycle universitaire ou un diplôme d'ingénieur (secteur agricole). La proportion de jeunes ayant connu une durée totale de chômage supérieure à un an au cours des trois premières années de vie active est dans tous les cas de l'ordre de 10 % ou plus, sauf à l'issue des écoles d'ingénieurs où cette proportion s'élève à 6 %.

c) La chimie tient une place à part entre les formations en sciences exactes et celles en sciences de la nature et de la vie, du point de vue de l'insertion professionnelle des jeunes. Les secteurs d'activité économique sur lesquels se placent les jeunes sortant de cette spécialité ont connu une crise importante de l'emploi à tous les niveaux de formation. La reprise qui s'amorce au milieu des - années 80 touche plus les hauts niveaux de formation (I, II) que les niveaux intermédiaires (III et IV). Les écarts dans les conditions d'insertion professionnelle s'en trouvent beaucoup plus creusés qu'ailleurs. La proportion d'accès direct à un premier emploi stable passe de 30 % environ au niveau IV à 40 % au niveau III, 56 % après une deuxième cycle universitaire et 75 % après une école d'ingénieurs. Les écarts entre proportion de jeunes ayant connu une durée totale de chômage supérieure à un an sont forts : plus de 20 % au niveau IV, entre 10 et 15 % au niveau III, 10 % après un deuxième cycle universitaire et seulement 2,4 % après une école d'ingénieurs.

2.4.2 - Les conditions d'accès à l'emploi à l'issue des spécialités de formations tertiaires (graphique 30).

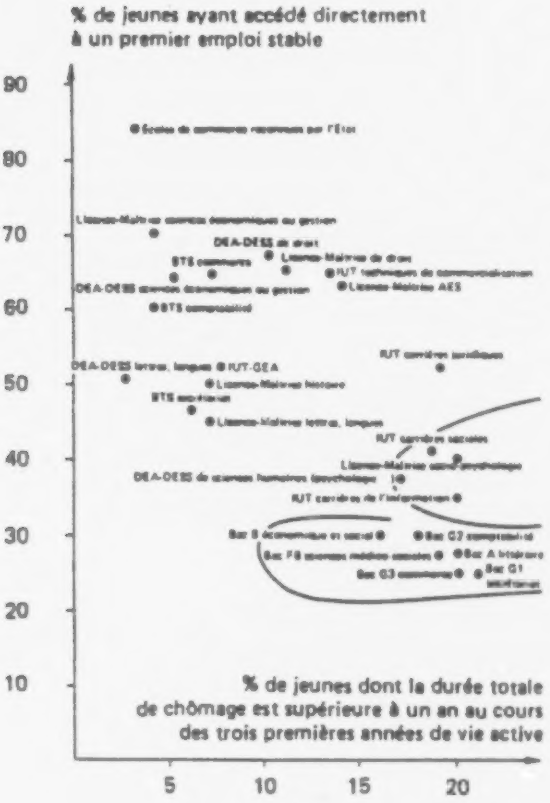
Les clivages par niveau de diplôme et groupe de spécialités de formations sont beaucoup plus forts à l'issue des spécialités de formations tertiaires que les formations industrielles ou scientifiques. Le niveau IV de formation tient une place particulière. Les spécialités de formations tertiaires n'y induisent pas de différences marquées dans l'accès à l'emploi que cette formation soit générale (série A ou B du baccalauréat) ou technologique (série G ou F8). Entre 20 et 30 % seulement des jeunes issus de ce niveau accèdent directement à un emploi stable. La proportion de jeunes ayant connu une durée totale de chômage supérieure à un an oscille entre 15 et 20 % ce qui est donc très élevé.

a) les formations **commerciales, de sciences économiques ou de gestion** dispensées aux niveaux I à III sont les mieux placées. La proportion d'accès direct à l'emploi stable dépasse 60 % (80 % pour les diplômés d'écoles de commerce reconnue par l'Etat), le passage par le chômage est faible (sauf les diplômés d'un IUT de techniques de commercialisation).

Ce sont aussi des formations dont les flux de jeunes formés sont en très forte croissance au début des années 90. La très forte demande de cadres commerciaux et de gestion au cours des années 70 à 80 expliquent la qualité de l'insertion professionnelle des jeunes et le développement rapide des établissements privés d'enseignement supérieur commercial. Il est vraisemblable qu'un désajustement va se produire entre offre et demande de diplômés au cours des années 90. Il va créer une

Graphique 30

Diplômes et spécialités selon la proportion de jeunes accédant à un emploi stable et la proportion de jeunes ayant connu une durée totale de chômage supérieure à un an (Spécialités de formations tertiaires)



Source : CEREQ - Observatoire EVA

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tension forte sur l'insertion professionnelle des jeunes de niveau III de ces spécialités.

b) les formations **juridiques** traditionnellement associées dans les universités constituent un ensemble dans le développement est mieux maîtrisé et plus lent que celui des formations du groupe précédent. Le taux d'accès direct à l'emploi stable est très élevé à l'issue du deuxième ou troisième cycle juridique. Cependant 10 % environ des diplômés ont connu plus d'un an de chômage au cours de leurs trois premières années de vie active. Parallèlement à l'entrée massive dans les professions réglementées (avocat, conseiller juridique, concours de la fonction publique), il semble exister une petite fraction de jeunes diplômés ayant de réelle difficulté d'insertion. Nous verrons ultérieurement que la proportion de jeunes occupant un emploi déclassé n'est pas négligeable.

c) Les formations à la **comptabilité ou au secrétariat** concerne surtout des diplômés de niveaux III ou IV. La rupture est nette suivant le niveau de diplôme. Les conditions d'entrées dans la vie active sont très favorables à l'issue d'un DUT ou BTS (plus de 50 % d'accès direct à l'emploi stable, chômage très faible). Par contre les jeunes sortant du niveau IV (bac G2 pour la comptabilité ou G1 pour le secrétariat) sont dans une situation précaire.

La très forte croissance des BTS dans ces spécialités à la fin des années 80 risque là encore de modifier les conditions d'insertion des jeunes et aviver la concurrence entre les diplômés de niveau III et du niveau IV.

d) les formations **littéraires** (lettres, langues, histoire, géographie) sont entièrement assurées dans les universités. La finalité principale est l'enseignement. Ceci explique les conditions particulières de l'entrée sur le marché du travail de ces diplômés. Un grand nombre prend directement un emploi de maître auxiliaire (considéré comme emploi précaire) sans même se présenter aux concours de recrutement de professeur. La précarité de l'emploi ne vas pas se faire avec un passage fréquent par le chômage.

La très forte demande d'enseignement jusqu'à la fin de cette décennie devrait garantir à cette population une stabilité des conditions d'insertion professionnelle.

e) la situation professionnelle à l'issue des formations en **sciences humaines** (sociologie, psychologie) s'est fortement dégradée au cours des années 80. Les flux de diplômés se sont accrus au cours des années 70 et 80. Beaucoup de jeunes sont entrés sur le marché du travail et ont poursuivi ultérieurement des études universitaires (cas fréquent pour la préparation d'un DESS de psychologie). Le maintien dans l'emploi de cette catégorie ne pose pas de difficultés.

Mais ce sont les plus jeunes qui en période récente (milieu des années 80) ont la plus grande difficulté à trouver un premier emploi à l'issue d'une formation initiale. Les déclassements et changements d'orientation sont nombreux.

Troisième partie

Les diplômés de l'enseignement supérieur et l'emploi

1 - Depuis 30 ans, un accroissement fort mais irrégulier des effectifs d'ingénieurs, cadres et professions intermédiaires

Un premier élément favorable à l'insertion professionnelle des diplômés de l'enseignement supérieur et la croissance soutenue de toutes les catégories d'emplois de niveau supérieur depuis 30 ans : ingénieurs et cadres supérieurs (public ou privé), professions intermédiaires (instituteurs, techniciens, professions intermédiaires administrative et commerciale...) (Tableau 9 et Graphique 31).

1.1 - Les ingénieurs et cadres supérieurs

La progression des effectifs d'ingénieurs et cadres est la plus forte de toutes les catégories sociales. Ils sont environ 900 mille en 1962, et 2,3 millions en 1989. Leur développement est le plus rapide en début de période (4,3 % par an entre 1962 et 1975) et reste soutenu ensuite (2,9 % entre 1975 et 1982, 3,2 % entre 1982 et 1989).

Ce sont les professeurs et professions scientifiques qui ont connu le rythme de croissance le plus élevé surtout en début de période (8,2 % par an entre 1962 et 1975). Malgré les fluctuations dans les politiques de recrutements des enseignants (ralentissement en 1979-1981, puis 1984-1985), la progression de cette catégorie n'a pas cessé (3,7 % par an entre 1975 et 1982, 3,9 % entre 1982 et 1989). Le vieillissement de cette catégorie lié au fort recrutement des années 1970, induit aux besoins nouveaux de recrutement très important pour les années 90, même si le stock n'était plus amené à croître rapidement.

Deux autres catégories importantes ont connu une expression forte et régulière : les ingénieurs (159 000 en 1962 et 505 000 en 1989) et les cadres administratifs et commerciaux d'entreprises (281 000 en 1962, 625 000 en 1989). Les ingénieurs recrutent une forte proportion de diplômés, ce qui est moins vrai des cadres administratifs et commerciaux d'entreprises où la proportion de diplômés de niveau inférieur à bac +2 est très importante.

Les professions libérales se sont développées plus tardivement que les autres, si bien que les effectifs n'ont fait que doubler au cours de la période (133 000 en 1962, 266 000 en 1989). Cette catégorie comprend les médecins dont le nombre s'est fortement accru au cours des années 70. L'instauration du numerus clausus a induit une lente stabilisation des effectifs de cette profession. La démographie de cette profession fait que les besoins de renouvellement se feront sentir de nouveau après l'an 2000.

Les cadres supérieurs de la fonction publique représentent le dernier groupe important. C'est celui dont la progression a été la plus faible (157 000 en 1962, 235 000 en 1989). Après une croissance lente au cours des années 60 et 70 (2,4 % entre 1962 et 1975, 2 % entre 1975 et 1982), cette catégorie s'est stabilisée au cours des années 80 induisant un quasi arrêt du recrutement des jeunes.

1.2 - Les professions intermédiaires

Les professions intermédiaires se sont développés à un rythme un peu inférieur à celui des ingénieurs et cadres, mais elles représentent des effectifs très importants (2,1 millions en 1962, 4,6 millions en 1989).

La croissance est forte jusqu'à la crise des années 70 (3,9 % par an entre 1962 et 1975). Elle se ralentit beaucoup après (1,9 % par an entre 1975 et 1982, 1,4 % entre 1982 et 1989). Les diverses professions qui constituent cette catégorie socio-professionnelle se sont développées à des rythmes différents.

Les professions de la santé (infirmiers...) et du travail social (éducateurs...) ont connu le développement le plus spectaculaire au cours des années 60 et 70 (190 000 en 1962, 708 000 en 1989). Leur expansion s'est ralentie au cours des années 80. Ces professions ont fait le plein de leurs effectifs. Elles concernent très majoritairement des diplômés de niveau III. Avec le ralentissement des recrutements, les écoles de santé ou des professions sociales ont réduit leur nombre de diplômés depuis le début des années 80. Là aussi, les besoins de recrutement induit par le vieillissement de ces professions ne se feront sentir de nouveau qu'après l'an 2000.

Les instituteurs et assimilés ont vu la même forme d'expansion que les professeurs (Cf. supra). Ils sont 385 000 en 1962, 816 000 en 1989. La croissance très rapide des années 60-70 a conduit à un vieillissement de cette profession qui implique de gros besoins de renouvellement au cours des années 90 de diplômés d'enseignement supérieur.

Les professions intermédiaires administratives de la fonction publique se sont développés régulièrement mais faiblement (181 000 en 1962, 374 000 en 1989). Le blocage du recrutement de cadres supérieurs de la fonction publique (Cf. supra), ont conduit de nombreux diplômés de l'enseignement supérieur à se présenter et obtenir les concours de niveau inférieur. La promotion interne qui s'en est suivi a surtout profité aux diplômés de l'enseignement supérieur qui se trouvaient déclassés au départ.

Les professions intermédiaires administratives et commerciales d'entreprises forment la catégorie dont le développement a été le plus rapide au cours des années 60, puis au cours des années 80 (3,2 % par an entre 1962 et 1975, 1,3 % entre 1975 et 1982, puis à nouveau 3,3 % entre 1982 et 1989). C'est une catégorie composée majoritairement de non-diplômés de l'enseignement supérieur.

Les techniciens constituent un groupe dont le développement a été extrêmement rapide au cours des années 60 (5,5 % par an entre 1962 et 1975). Les remèdes à la pénurie des techniciens ont fait l'objet de nombreux travaux dans le cadre de la planification française (Vème, VIème et VIIème Plan). Leur croissance s'est fortement ralentie ensuite (2 % par an entre 1975 et 1982, puis 1 % par an entre 1982 et 1989 ; voir référence). Cependant cette catégorie a fait de plus en plus appel à des diplômés de niveau III.

Tableau 9

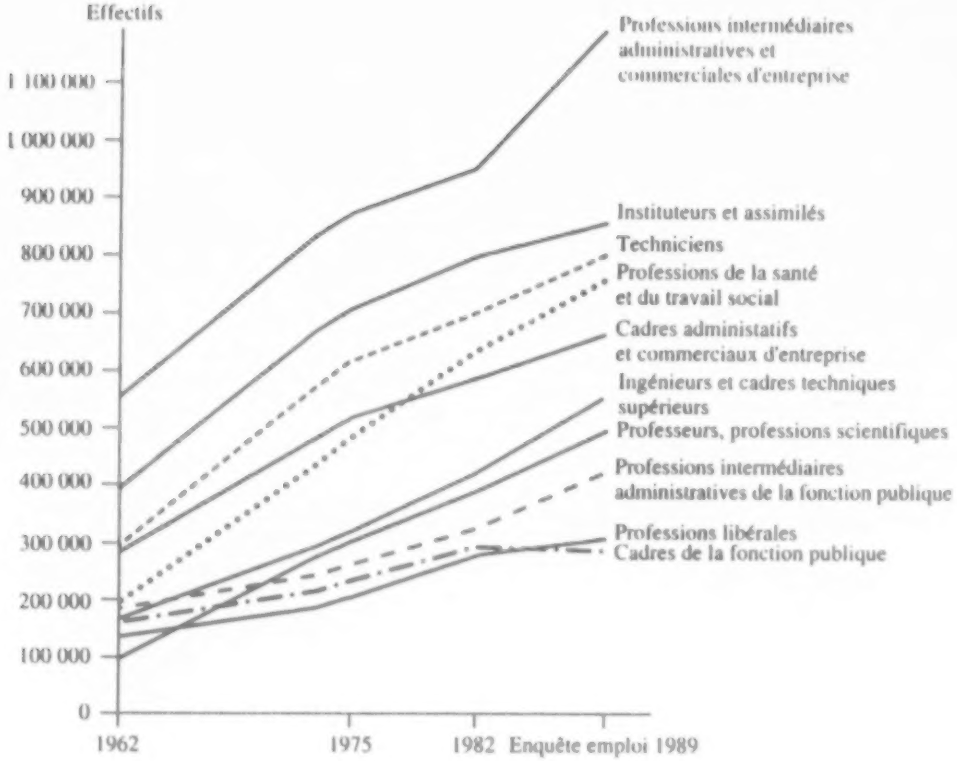
Taux d'accroissement annuel par catégorie professionnelle entre 1962 et 1989

	De 1962 à 1975	De 1975 à 1982	De 1982 à 1989
Ingénieurs et cadres	4,3	2,9	3,2
Professions libérales	2,5	3,7	3,2
Cadres fonction publique	2,4	2,0	0,9
Professeurs, scientifiques	8,2	3,7	3,9
Prof. information spectacle	3,1	2,7	5,1
Cadres adm. commerciaux	4,3	1,8	2,7
Ingénieurs et cadres techniques	4,7	3,6	3,1
Professions intermédiaires	3,9	1,9	1,4
Instituteurs et assimilés	4,4	1,7	0,7
Santé et travail social	6,6	4,5	2,7
Prof. intermédiaire publique	2,3	2,0	1,6
Prof. intermédiaire adm. commercial	3,2	1,3	3,3
Techniciens	5,5	2,0	1,0
Contremaitres et agents maitrise	3,1	0,8	- 1,8

Source : INSEE.

Graphique 31

Evolution des effectifs par catégories socio-professionnelles



Source : "Population active, emploi et chômage depuis 30 ans" - La Collection de l'INSEE D123, Tableau 2.7A et Enquête Emploi 1989.

2 - *Un marché du travail des ingénieurs, cadres supérieurs, et professions intermédiaires très actif et favorable au recrutement de jeunes diplômés d'enseignement supérieur. Les déclassements au premier emploi peuvent cependant croître dans les années à venir*

La croissance des effectifs des professions de niveau supérieur ne suffit pas à garantir une bonne insertion professionnelle des diplômés d'enseignement supérieur.

Elle dépend de la promotion professionnelle interne aux entreprises d'une part et des recrutements effectués par les entreprises d'autre part. Parmi ces derniers, quelle part est faite au recrutement de jeunes sortant du système éducatif (ou du Service national que les diplômés d'enseignement supérieur effectue dans la majorité des cas à la fin de leurs études) ?

Entre 1970 et 1980, le nombre de jeunes issus du système éducatif ou du service national qui sont en mars de l'année suivant classés ingénieurs, cadres ou professions intermédiaires décroît lentement de 161 000 en 1973 à 145 000 en 1980. Ce nombre demeure stable au cours des années 80 (148 000 en 1988).

Entre 1970 et 1980, le nombre de sortants du système éducatif au niveau I à III est inférieur au nombre de jeunes recrutés comme ingénieurs, cadres et professions intermédiaires l'année suivante. Le marché du travail leur est donc très favorable puisque les jeunes titulaires d'un baccalauréat ou diplômes de niveaux inférieurs doivent nécessairement être recrutés sur des emplois des professions intermédiaires (cas très fréquent des professions intermédiaires administratives ou commerciales d'entreprises et d'une partie des techniciens).

Depuis 1980, le flux annuel de diplômés de l'enseignement supérieur (167 000 en 1983 et 185 000 en 1987) est supérieur au nombre de jeunes en emploi de cadres et professions intermédiaires. L'accroissement de l'écart entre flux de diplômés et recrutement mesuré en mars de l'année suivante implique un nécessaire déclassement dans le premier emploi occupé par une fraction des diplômés de l'enseignement supérieur, et/ou un retard dans l'accès à l'emploi.

Deux aspects invitent à ne pas attribuer au déclassement un rôle négatif excessif. En premier lieu, la catégorie des employés recrute un nombre croissant de jeunes formés au niveau III (la moitié des titulaires d'un BTS et le tiers d'un DUT de spécialité tertiaire en 1984 deviennent employés) (Cf. paragraphe 3.2). Or ces employés ont un niveau de rémunération supérieur à celui des employés moins diplômés, et qui se rapprochent des salaires des professions intermédiaires.

En second lieu, les mobilités de reclassement sont très favorables aux diplômés de niveau supérieur dès les premières années de vie active. On en donne quelques exemples ultérieurement (paragraphe 3.4).

L'importance des poursuites d'études vers l'enseignement supérieur à la fin des années 80 va entraîner une croissance très vigoureuse du flux de sortants aux niveaux I à III au cours des années 90. Un déséquilibre potentiel existe entre les recrutements annuels d'emplois de niveau supérieur et flux de sortants aux niveaux I à III.

Tableau 10

Evolution des entrées annuelles dans les entreprises (cadres et professions intermédiaires) et part des jeunes sortant du système éducatif (niveaux I à III)

Effectifs en milliers

Années	1973 1974	1974 1975	1975 1976	1976 1977	1977 1978	1978 1979	1979 1980	1980 1981	1981 1982	1982 1983	1983 1984	1984 1985	1985 1986	1986 1987	1987 1988	1988 1989
A : Ensemble des recrutements (1)	3981	▨	▨	▨	3062	▨	▨	▨	▨	▨	2611	25[illegible]8	2773	2822	3067	3367
B : Recrutement dans les catégories : ingénieurs, cadres et professions intermédiaires	▨	▨	▨	▨	▨	▨	▨	▨	▨	▨	657	658	668	718	782	▨
C :Dont jeunes débutants (2) en % :	161	▨	▨	▨	165	157	156	145	▨	▨	145 22	134 20	145 22	144 20	148 20	148 19
Flux de sortants du système éducatif aux niveaux I à III(3)	133	130	137	140	145	158	159	161	168	168	167	175	174	184	185	193

Légende : ▨ Statistiques non disponibles.

SOURCE : BILANS FORMATION-EMPLOI.

(1) Entre mars 1987 et mars 1988, les entreprises ont recrutés 3 067 000 individus qui étaient en mars 1987, actifs dans une autre entreprise ou bien inactifs, ou au chômage, en études ou apprentissage (les TUC et SIVP sont compris dans l'emploi).

(2) En mars 1988, 148 000 jeunes étaient ingénieurs, cadres ou professions intermédiaires et étaient l'année précédente dans le système éducatif ou en apprentissage ou au Service national. Ils représentent 20 % des 782 000 recrutements d'ingénieurs, cadres et professions intermédiaires réalisées entre mars 1987 et mars 1988.

(3) En juin 1987, 185 000 jeunes sont sortis du système éducatif au niveau I à III de formation.

Plusieurs scénarios d'évolutions se dessinent :

- Dans le prolongement de la tendance actuelle, on peut faire l'hypothèse d'une poursuite du recrutement global d'ingénieurs, cadres et professions intermédiaires et d'une stabilité de l'appel des jeunes débutants. Dans ce cas, on verra apparaître au cours des années 90, un allongement du chômage d'insertion des jeunes diplômés et/ou une croissance du déclassement à l'embauche (le recrutement comme employé à l'issue d'un diplôme de niveau III tertiaire (DUT ou BTS) est déjà très fréquent).

- Une seconde hypothèse porte sur la croissance du recrutement de jeunes débutants. Le taux d'appel aux jeunes débutants dans l'ensemble des recrutements était de 22 % en 1984. Si ce taux demeure constant (au lieu de décroître comme on le voit à la fin des années 80), le déséquilibre entre recrutement de jeunes débutants et flux de diplômés demeure faible garantissant une insertion professionnelle favorable et un faible taux de déclassement des premiers emplois occupés (ouvriers, employés).

Il y a cependant un secteur ou l'évolution devrait demeurer favorable au recrutement de jeunes diplômés, c'est celui de l'enseignement où des pénuries de diplômés se manifestent déjà et où les besoins s'annoncent considérables jusqu'à l'an 2000.

D'ici à l'an 2000 et au-delà, les pyramides d'âge très déséquilibrées dans certaines professions vont entraîner des départs accrus à la retraite et des besoins de plus en plus élevés de recrutement de jeunes diplômés.

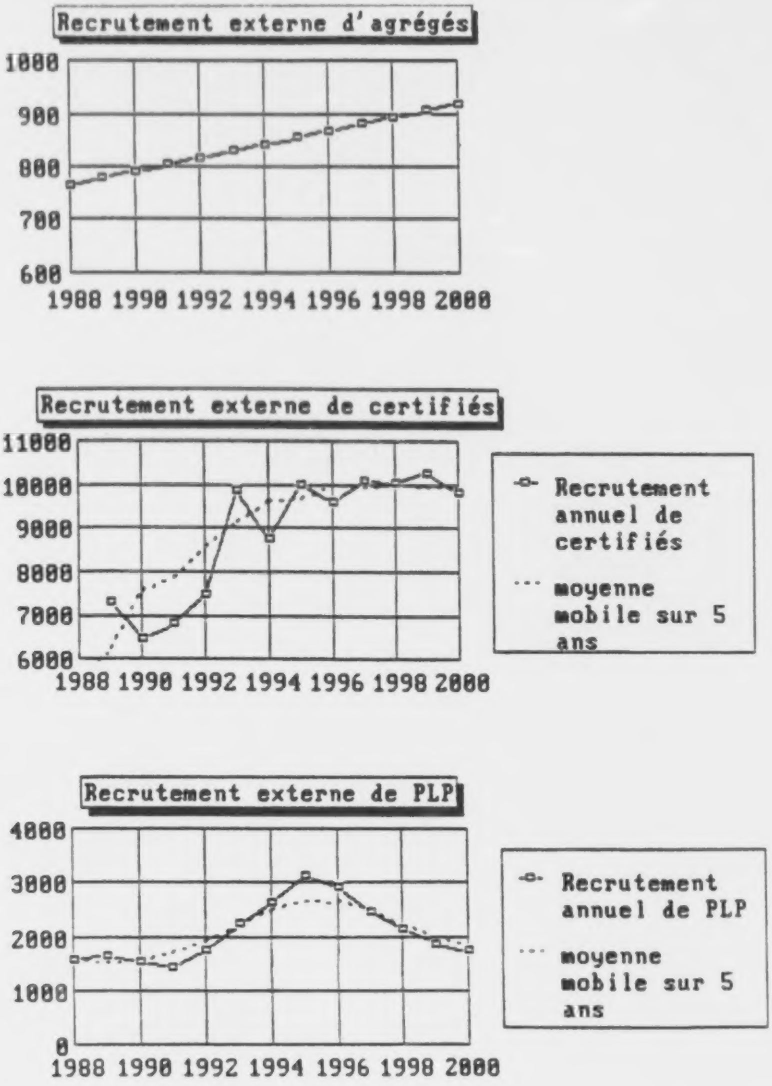
C'est en particulier le cas des enseignants du second degré : d'ici l'an 2000, environ un tiers des enseignants actuellement en activité auront quitté l'enseignement. A ces besoins de renouvellement en activité s'ajouteront les besoins nouveaux liés à l'accroissement de la scolarisation des jeunes jusqu'au niveau du baccalauréat. Au total c'est près de 160 000 professeurs qui devront être recrutés d'ici l'an 2000 pour répondre aux besoins de l'enseignement secondaire (collèges et lycées), ce qui représente en moyenne annuelle sur la période un recrutement de plus de 12 000 enseignants par an (certifiés, agrégés et professeurs de lycée professionnel : PLP).

Bien entendu, certaines disciplines seront plus concernées que d'autres : les mathématiques, les sciences physiques mais également des disciplines littéraires comme les lettres, l'histoire-géographie et l'anglais.

Bien que ces recrutements se révèlent déjà difficiles à réaliser actuellement, la situation deviendra encore plus défavorable au-delà de l'an 2000 avec des départs à la retraite de générations plus nombreuses : jusqu'à 17 000 départs par an aux environs de l'année 2008.

Graphique 32

Besoins annuels de recrutement des enseignants du second degré



Source : Ministère de l'Education nationale - DEP. Note d'information n° 88-12.

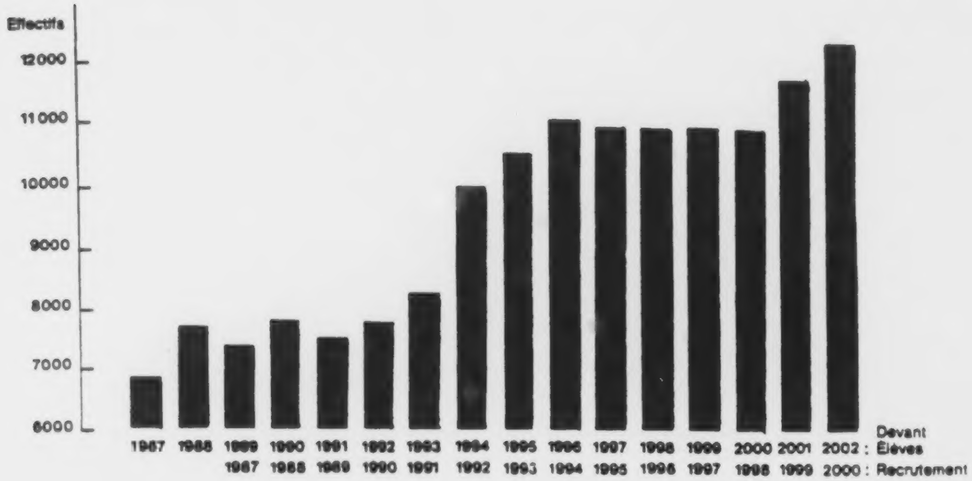
A ces besoins de recrutements accrus pour les enseignements du second degré viendra s'ajouter les besoins pour le premier degré dont le niveau de recrutement actuellement à bac + 2 a été porté à bac + 3 (licence) donc comparable à celui des professeurs certifiés du second degré. D'ici l'an 2000, il faudra recruter 130 000 instituteurs essentiellement liés à des départs à la retraite (96 % des besoins). Ces besoins d'abord modérés jusqu'en 1992 iront ensuite croissant, passant de 7 500 par an à environ 11 000 par an jusqu'à la fin des années 90, puis 12 000 environ en l'an 2000.

C'est dire combien la pression sera forte en direction des diplômés de l'université et il faut s'attendre à de fortes difficultés de recrutement et à des pénuries durables dans certaines disciplines.

En effet, si l'on examine le flux de diplômés actuellement formé dans les universités françaises (Cf. Première partie), il est clair que dans les disciplines qui approvisionnent en grande partie les professions enseignantes (lettres et sciences humaines d'une part et sciences d'autre part), la pénurie existe d'ores et déjà.

Graphique 33

Besoin annuel de recrutement d'instituteurs du premier degré public (France métropolitaine)



Source : Ministère de l'Education nationale.

D'autant qu'à ces besoins de recrutements considérables du Ministère de l'Education nationale viendront s'ajouter ceux des secteurs d'activités économiques, en particulier en direction des formations scientifiques (ingénieurs et cadres techniques). On peut prévoir que la tension sera vive sur le marché de l'emploi scientifique.

Les établissements d'enseignement supérieur (université, écoles, section de technicien supérieur...), les niveaux de diplôme (I à III), les disciplines dessinent une typologie des formations de niveau supérieur fortement articulée à des catégories d'emplois définies par un niveau de classification (cadres, professions intermédiaires...), une profession au groupe professionnel (professeur, ingénieur d'études, avocat, dessinateur, comptable...), et éventuellement un secteur d'activité économique public ou privé (industrie, services marchands, banques, services non-marchands, santé, administration, enseignement).

Cette relation entre formation et emploi de niveau supérieur présente une grande stabilité dans le temps. Ce point sera plus particulièrement développé plus loin à propos des formations universitaires (partie 4). La stabilité de cette relation cache un effet de classement. Un grand nombre de formations ou d'emplois ont vu leur contenu profondément évolué au cours des ans sans que leur appellation en soit changée.

La plupart des contenus de formation de deuxième ou troisième cycle scientifique sont obsolètes en deux ou trois ans dans les secteurs à évolution rapide (informatique, génétique...). De nombreuses formations tertiaires se sont transformées en élargissant leur champ disciplinaire (introduction de la statistique, de l'informatique dans les formations économiques par exemple ou encore de l'économie, de la gestion, de la sociologie dans les formations d'ingénieurs, etc...).

Du côté des emplois, l'introduction de l'informatique par exemple ou de la robotique a modifié le contenu de nombreux emplois depuis quelques années.

Au-delà de ces évolutions, chaque filière de formation montre une forte concentration de ses débouchés sur quelques types d'emplois.

Tableau 11

Secteur privé ou public et statut de l'emploi public en mars 1987 des diplômés issus de l'enseignement supérieur en 1984

	Professions libérales ou indépendantes	Entreprises privées ou nationalisées	Secteur public	TOTAL	ENSEMBLE
DUT Secondaire	4.1	78.9	17.0	100.0	5 516
DUT Tertiaire	11.2	74.9	13.9	100.0	7 227
S/Total DUT	**8.1**	**76.6**	**15.3**	**100.0**	**12 743**
BTS Secondaire	8.3	75.3	16.4	100.0	5 925
BTS Tertiaire	13.5	71.0	15.5	100.0	10 442
S/Total BTS	**11.6**	**72.5**	**15.8**	**100.0**	**16 367**
Lic./Maît./Sciences	2.9	46.5	50.6	100.0	3 355
Lic./Maît./Droit - Sc. Eco. et Diplôme IEP	12.4	48.0	39.6	100.0	7 087
Lic./Maît./ Lett. et Sc. Humaines	3.9	34.3	61.8	100.0	7 006
Lic./Maît./Autres Indt.	8.7	43.5	47.9	100.0	704
S/Total 2ème cycle	**7.2**	**42.3**	**50.5**	**100.0**	**18 152**
DEA-DESS Sciences	1.0	72.3	26.7	100.0	1 172
DEA-DESS Droit-Sc. Eco	17.6	58.6	23.8	100.0	2 526
DEA-DESS Lett-Sc. Hum.	6.3	46.7	47.0	100.0	1 260
DEA-DESS Autres Indt.	11.0	58.7	30.3	100.0	390
S/Total DEA-DESS	**10.8**	**58.8**	**30.4**	**100.0**	**5 350**
HEC-ESSEC-ESCP..	3.9	93.6	2.5	100.0	993
ESCAE	10.0	86.5	3.6	100.0	1 144
Autres écoles Commerce	9.5	87.0	3.5	100.0	683
S/Total Ecoles Commerce	**7.7**	**89.1**	**3.2**	**100.0**	**2 820**
Ec. Ing. Sc. Exactes	0.9	93.5	5.7	100.0	5 498
Ec. Ing. Chimie	0.0	94.0	6.0	100.0	431
Ec. Ing. Agro-Agric.	6.7	75.2	18.1	100.0	956
S/Total Ec. Ingénieurs	**1.6**	**91.0**	**7.4**	**100.0**	**6 885**
TOTAL	**8.3**	**66.2**	**25.6**	**100.0**	**62 317**

Source : CEREQ - Observatoire EVA - 1987.

3.1 - La moitié des diplômés universitaires intègrent le secteur public, contre un diplômé sur six environ issue d'une école, d'un IUT ou d'une STS

Un **premier grand clivage** est celui qui s'opère entre les formations qui conduisent majoritairement **leurs diplômés vers des emplois du secteur privé et celles dont le débouché principal est la fonction publique** (Tableau 11) : dans les premières on peut ranger les formations de niveau III quel que soit le domaine de spécialité avec environ 15 % seulement d'emplois occupés dans la fonction publique et près d'un emploi sur trois dans une entreprise privée, et les diplômés des écoles d'ingénieurs et de commerce, les premiers étant environ un sur trois à occuper un emploi salarié dans une entreprise privée mais un quart dans une entreprise nationale, les seconds étant à près des trois quarts salariés d'une entreprise privée et 16 % dans une entreprise nationale mais quasiment absents de la fonction publique (3 %).

Les formations universitaires de deuxième cycle débouchent dans un cas sur deux sur des emplois de la fonction publique mais la spécialité des études joue ici un grand rôle : si les littéraires se dirigent à plus de 50 % vers les emplois publics suivis de près par les scientifiques, les juristes mais surtout les diplômés de sciences économiques et de gestion sont plus fréquemment occupés dans les entreprises voire occupent une profession libérale (avocat, expert comptable, conseiller juridique...) ou sont chefs d'entreprises.

3.2 - Le niveau du diplôme est fortement corrélé au niveau de l'emploi (Tableau 12)

3.2.1 - Neuf diplômés sur dix issus d'une spécialité industrielle d'IUT ou STS, et un diplômé sur deux d'une spécialité tertiaire sont classés en professions intermédiaires

Si l'on s'intéresse d'abord aux diplômés de niveau III (21), on observe que la spécialité introduit ici une forte différenciation. Pour les formations du **secteur secondaire (ou industriel)**, les diplômés occupent dans plus de 60 % des cas des emplois de techniciens, dessinateurs ou agents de maîtrise, auxquels on peut adjoindre environ 25 % d'emplois des professions intermédiaires d'entreprises ou de la fonction publique (22). C'est-à-dire qu'à peu près 90 % des diplômés de niveau III industriel accèdent à des emplois correspondant à leur niveau de formation. En outre, leur déclassement sur des emplois d'ouvriers ou d'employés demeure faible et de l'ordre de 9-10 %. Cette forte liaison existe entre spécialité de DUT ou BTS et spécialité de l'emploi : ainsi pour prendre quelques exemples deux titulaires d'un DUT "électronique" sur trois occupent un emploi de technicien d'études, essai-contrôle ou dessinateur d'études ou technicien de maintenance-dépannage en électricité-électronique ; il en va de même de 59 % des diplômés avec un DUT d'"automatique" ; les deux tiers des titulaires d'un DUT "génie civil" sont dessinateurs du BTP ou conducteurs de travaux ; 58 % des diplômés avec un BTS "mécanique-bureau d'études" sont dessinateurs-projeteurs en construction mécanique ; 71 % des titulaires d'un BTS "électronique" sont dessinateurs d'études ou techniciens d'études ou de maintenance en électricité-électronique. Cette **forte relation formation- emploi n'exclut pas une plus forte dispersion** pour certaines filières entre des emplois comme par exemple les formations de la mécanique (sauf BTS bureau d'étude) qui se répartissent entre des emplois de dessinateurs, de techniciens d'études de maintenance, de préparation des méthodes et autres agents de maîtrise, et parfois un plus fort déclassement sur des emplois ouvriers et employés.

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(21) Pour une analyse détaillée de l'insertion professionnelle des DUT et BTS voir J.L. Pigelet - "Perspectives récentes sur l'insertion professionnelle des IUT et des STS" - CEREQ - Formation Emploi n° 26, avril-juin 1989.

(22) Fonctionnaires de niveau moyen et enseignants de niveau moyen ou non-titulaires.

Pour les formations de niveau III du **secteur tertiaire** la relation formation-emploi ne peut être appréhendée avec autant de précision : cela tient à la difficulté qu'il y a de distinguer clairement en terme de niveau entre les "employés" et les "professions intermédiaires" en l'absence de données plus approfondies sur le contenu réel d'activité, l'étendue des responsabilités et l'environnement organisationnel alors que pour les emplois industriels la distinction "technicien" - "ouvrier" est clairement définie dans les entreprises et pour les individus.

La relation que l'on a établie entre niveau de diplôme et niveau d'emploi est dès lors plus incertaine, mais elle fait cependant apparaître que plus de 50 % des DUT tertiaires et plus de 40 % des BTS tertiaires occupent des emplois correspondant au niveau de formation (professions intermédiaires des services comptables et administratifs, du commerce et de la banque et dans une moindre mesure techniciens ou fonctionnaires et enseignants de niveau moyen). En contrepartie la part des employés est ici beaucoup plus élevée voire dominante pour l'ensemble des BTS tertiaire (51 % d'employés contre 35 % pour les DUT).

Si en terme de niveau, la relation formation-emploi est ainsi moins étroite pour les formations tertiaires que pour les formations industriélles, la spécialité d'emploi en revanche est fortement liée à celle du diplôme : par exemple, pour le DUT GEA (option finance-comptabilité et GAPMO), c'est près de 60 % des emplois qui concernent les services comptables (maîtrises et techniciens ou employés) ; les formations de secrétariat conduisent dans plus de deux cas sur trois à des emplois de secrétariat ; le DUT informatique (informatique de gestion) conduit 82 % de ses diplômés vers des emplois de techniciens de l'informatique (analyste-programmeur) ; le BTS tourisme oriente ses diplômés vers les emplois correspondants mais avec un fort déclassement (79 % d'employés du transport ou tourisme et d'agents ou d'hôtesses d'accueil). Pour les formations du commerce, si environ un diplômé sur trois accède à des emplois intermédiaires du commerce et de la vente (représentant, agent commercial...), la même proportion se répartit dans les différents emplois d'employés avec une grande dispersion sauf une légère préférence pour les emplois de la banque et de l'assurance.

Tableau 12

Emplois en mars 1987 des diplômés issus de l'enseignement supérieur en 1984

EMPLOI	DUT Sec.	DUT Tert.	S/Tot DUT	BTS Sec.	BTS Tert.	S/Tot BTS	Lic. Mat. Sciences	Lic. Mat. Droit, Sc Éco, Dip. IEP	Lic. Mat. Lettres Sc. Hum.	Lic. Mat. Autres	S/Tot. 2ème cycle
Fonct. sup.	1,2	0,9	1,0	0,4	0,1	0,2	6,2	19,0	3,0	8,7	10,0
Autres cadres sup.	0,4	4,6	2,8	0,9	1,5	1,3	3,0	23,5	8,3	9,6	13,2
Ingénieurs	0,6	2,3	1,6	0,4	0,2	0,3	22,2	2,1	0,5	3,2	5,2
Prof. ens. sup. cherc.	0,0	0,0	0,0	0,1	0,0	0,0	2,0	0,1	0,4	0,0	0,5
Prof. certifié, agrégé	0,4	0,1	0,3	0,6	0,3	0,3	23,2	2,4	22,6	9,0	14,4
S/T Ing. et cadres sup.	**2,6**	**8,0**	**5,7**	**2,3**	**2,1**	**2,1**	**56,6**	**47,1**	**34,8**	**30,5**	**43,3**
PEGC Instit.	1,6	1,3	1,5	1,8	1,7	1,7	7,1	2,5	13,8	2,8	7,8
Ens. non tit. (MA-MI)	5,0	3,7	4,3	5,7	3,1	4,0	9,2	3,5	12,3	12,2	8,3
Ens. secteur privé	0,9	1,0	1,0	0,7	1,5	1,2	4,6	1,6	7,0	3,8	4,3
S/T Prof. int. Ens.	**7,6**	**6,1**	**6,7**	**8,1**	**6,3**	**6,9**	**20,9**	**7,6**	**33,1**	**18,8**	**20,4**
Pr. in. fonct.	3,0	4,0	3,5	2,5	2,4	2,4	1,5	7,4	3,5	9,4	4,9
Prof. interm.	12,1	25,3	19,7	15,3	25,8	22,1	5,1	22,3	12,7	21,1	15,3
Techniciens	65,7	18,4	38,6	61,8	6,2	25,9	12,2	1,6	0,5	6,0	3,3
S/T Prof. inte. et Tech.	**80,7**	**47,7**	**61,8**	**79,5**	**34,4**	**50,4**	**18,8**	**31,3**	**16,7**	**36,6**	**23,5**
Employés	3,7	37,4	23,0	3,0	56,7	37,6	2,8	13,6	14,0	12,9	11,8
Ouvriers et divers	5,4	0,8	2,8	7,1	0,6	2,9	1,0	0,5	1,5	1,1	1,0
TOTAL ENSEMBLE	**100,0 5 218**	**100,0 6 987**	**100,0 12 205**	**100,0 5 722**	**100,0 10 368**	**100,0 16 090**	**100,0 3 250**	**100,0 6 899**	**100,0 6 974**	**100,0 711**	**100,0 17 834**

Tableau 12 (Suite)

EMPLOI	DBA-DESS Sciences	DBA-DESS Droit-Sc. Éco	DBA-DESS Lettres, Sc. Hum.	DBA-DESS Autres	S/Total DBA-DESS	HEC-ESSEC ESCP..	BSCA[illegible]	Autres écoles commerce	S/Total écoles commerce	Écoles Ingénieurs-Sc. exactes	Écoles Ingénieurs chimie	Écoles Ingénieurs Agro-Agric.	S/Total Écoles Ingénieurs	TOTAL
Fonct. sup.	1,5	13,4	4,0	4,9	8,0	0,9	1,6	1,6	1,4	2,0	1,0	6,9	2,7	4,2
Autres cadres sup.	2,8	43,6	32,1	36,9	31,8	79,4	71,8	47,6	68,5	3,8	4,9	14,0	5,4	11,2
Ingénieurs	53,7	2,7	1,3	11,3	13,8	8,7	7,6	7,6	8,0	88,6	85,3	48,9	82,6	12,1
Prof. ens. sup. cherc.	5,3	0,0	0,9	1,3	1,4	0,2	0,0	0,0	0,1	0,7	1,0	3,1	1,0	0,4
Prof. certifié, agrégé	7,9	1,5	9,4	6,7	5,1	0,0	0,0	0,0	0,0	0,6	3,1	0,4	0,7	4,9
S/T Ing. et cadres sup.	**71,1**	**61,2**	**47,7**	**61,2**	**60,1**	**89,2**	**81,0**	**56,8**	**78,0**	**95,7**	**95,4**	**73,3**	**92,4**	**32,9**
PEGC Instit.	0,2	1,1	5,4	1,1	1,9	0,0	0,2	0,4	0,2	0,4	0,0	0,5	0,4	3,3
Ens. non tit. (MA-MI)	8,8	2,1	11,2	11,3	6,3	0,2	0,0	0,7	0,3	1,1	1,5	2,7	1,4	5,1
Ens. secteur privé	4,7	0,9	6,0	4,3	3,1	0,4	0,6	0,0	2,4	1,2	3,1	3,9	1,7	2,3
S/T Prof. int. Ens.	**13,6**	**4,1**	**22,7**	**16,7**	**11,4**	**0,6**	**0,8**	**1,2**	**0,8**	**2,8**	**4,6**	**7,24**	**3,5**	**10,6**
Pr. in. fonct.	1,0	3,3	4,5	0,5	2,9	0,0	0,4	0,0	0,1	0,0	0,0	1,2	0,2	3,1
Prof. interm.	4,7	21,4	18,4	13,7	16,6	8,8	14,5	25,7	15,2	0,8	0,0	7,0	1,6	16,7
Techniciens	6,9	0,6	1,0	2,4	2,2	0,2	0,4	2,2	0,8	0,7	0,0	6,1	1,4	16,1
S/T Prof. inte. et Tech.	**12,6**	**25,3**	**23,9**	**16,7**	**21,7**	**9,0**	**15,2**	**28,0**	**16,2**	**1,5**	**0,0**	**14,3**	**3,3**	**35,8**
Employés	1,6	8,5	5,5	4,9	6,1	0,9	2,8	14,0	4,9	0,1	0,0	0,7	0,2	18,9
Ouvriers et divers	1,1	0,9	0,2	0,5	0,8	0,2	0,3	0,0	0,2	0,0	0,0	4,6	0,7	1,8
TOTAL ENSEMBLE	**100,0 1 094**	**100,0 2 472**	**100,0 1 212**	**100,0 371**	**100,0 5 149**	**100,0 964**	**100,0 1 119**	**100,0 672**	**100,0 2 755**	**100,0 5 018**	**100,0 389**	**100,0 923**	**100,0 6 330**	**100,0 60 363**

Source : CEREQ - Observatoire EVA - 1987.

3.2.2 - *Quatre diplômés sur cinq issus d'une école d'ingénieurs ou de commerce sont ingénieurs ou cadres supérieurs*

Si l'on s'intéresse maintenant aux **diplômés des écoles d'ingénieurs et de commerce**, la relation formation-emploi en terme de niveau est également extrêmement forte : 82 % des diplômés d'une école d'ingénieurs occupent des emplois d'ingénieurs ou cadres techniques supérieurs d'entreprise ; 78 % des diplômés d'une école de commerce ou de gestion (reconnue par l'Etat) occupent un emploi de cadre supérieur.

Il est difficile de faire une analyse en terme de spécialité dans la mesure où beaucoup d'écoles n'ont pas de spécialités clairement affichées ou à l'inverse montrent une dispersion des options de spécialité finale des diplômes délivrés bien trop grande pour être prises en compte statistiquement au niveau national. On se limitera donc à un prudent regroupement très global en trois secteurs de. spécialités : sciences exactes, chimie et secteur agronomique-agricole, la nature des fonctions occupées dans les premiers emplois étant plus pertinente pour caractériser l'emploi que la spécialité (23).

Globalement, les sciences exactes et la chimie conduisent la quasi-totalité de leurs diplômés vers des emplois d'ingénieurs (89 % pour les premières et 85 % pour la seconde), 10 % environ occupant d'autres emplois de cadres supérieurs (fonctionnaires, professeurs, cadres administratifs ou commerciaux...).

En revanche les ingénieurs du secteur agronomique-agricole ne sont que un sur deux à occuper des emplois d'ingénieurs, mais environ 6 % sont fonctionnaires supérieurs (ingénieurs de l'Etat en particulier) et plus de 14 % occupent d'autres emplois de cadres supérieurs (cadres administratifs et commerciaux d'entreprise...). Enfin, un certain déclassement peut être observé (professions intermédiaires, enseignants de niveau moyen, techniciens, voire quelques employés et ouvriers) alors que ce phénomène est quasi-absent des autres spécialités.

La nature des fonctions occupées dans les premiers emplois des ingénieurs vient préciser ces observations.

Pour les sciences exactes qui représentent la très large majorité des ingénieurs diplômés, les fonctions "études-recherches-essais" et "informatique" sont largement dominantes parmi les emplois d'ingénieurs (30 % et 33 % respectivement) occupés par les jeunes diplômés. En revanche, les débuts dans la vie professionnelle se font beaucoup plus rarement sur des fonctions liées à la fabrication (13 %) ou périphériques à la production (entretien, planning : 5 %...).

Pour les ingénieurs chimistes, les fonctions "études-recherches" et "informatique" concentrent également l'essentiel des premiers emplois occupés par les diplômés. Mais ils occupent plus fréquemment des fonctions dans la production (26 %) que les ingénieurs diplômés en sciences exactes.

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(23) Même si on peut mettre en évidence une forte relation spécialité du diplôme-spécialité d'emploi.

Si la fonction "études-recherches" occupe également une grande partie des ingénieurs du secteur agronomique et agricole, on observe ensuite une beaucoup plus grande dispersion entre diverses fonctions : informatique (6 %), fonctions liées à la production (11 %), technico-commercial, enseignement, ...

Pour les diplômés des écoles de commerce, le type d'école d'origine a plus d'importance sur l'emploi que la spécialité du diplôme.

En effet, les écarts sont sensibles entre les différents types d'"écoles : le groupe des grandes écoles (HEC, ESSEC, ESC Paris et Lyon) conduit 90 % de ses diplômés vers des emplois de cadres supérieurs : cadres supérieurs financiers ou de la banque (44 %), cadres du commerce, marketing (22 %), chargés d'études économiques et financiers... (12 %).

Les titulaires d'un diplôme d'une ESCAE sont aussi dans une situation favorable avec 82 % de cadres supérieurs mais sur des fonctions légèrement différentes : 35 % sont cadres des services financiers et de la banque, 27 % sont cadres de gestion commerciale ou marketing, le reste occupant des fonctions diverses (technico-commerciales...).

Les diplômés des autres écoles de commerce ont une situation moins favorable avec 57 % seulement des cadres supérieurs sur des fonctions de gestion commerciale et marketing et beaucoup moins sur des fonctions financières. 29 % occupent un emploi intermédiaire (commerce, comptabilité...). Enfin 14 % sont sur des emplois déclassés d'employés, proportion qui est inférieure à 3 % pour les ESCAE et quasi-inexistante pour le groupe des grandes écoles.

On observera en outre, que ce dernier groupe occupe plus fréquemment des fonctions financières et commerciales dans les petites et moyennes entreprises que les diplômés des ESCAE, les grandes écoles étant quant à elles encore moins présentes dans ces petites entreprises.

3.2.3 - *L'orientation vers l'enseignement demeure dominante pour les diplômés d'un deuxième cycle universitaire en sciences ou lettres. Un diplômé sur deux d'un deuxième cycle de droit et sciences économiques est cadre supérieur. Les titulaires d'un diplôme de troisième cycle (DEA ou DESS) sont plus souvent ingénieurs et cadres supérieurs que ceux de deuxième cycle.*

La structure des emplois occupés à l'issue des filières universitaires diffère largement de ce que l'on observe à l'issue des écoles et a fortiori des formations technologiques de niveau III : 42 % seulement des diplômés de **deuxième cycle** (sciences, droit-sciences économiques et lettres-sciences humaines) accèdent à des emplois de cadres supérieurs... Mais une proportion presqu'équivalente accède à des emplois de niveau intermédiaire dont la moitié sont des emplois de l'enseignement (fonctionnaires et maîtres-auxiliaires, secteur privé).

En revanche, les déclassements sur des emplois d'employés ou d'ouvriers demeurent faibles (13 %).

La situation des titulaires d'un **DEA-DESS** est plus favorable dans la mesure où ceux-ci accèdent plus fréquemment à des emplois d'ingénieurs et cadres supérieurs (60 %) et dont la situation globale se rapproche de celle des écoles. Leur présence sur les emplois d'enseignants ou des professions intermédiaires est réduite ainsi que les déclassements.

Bien évidemment, les grandes spécialités font apparaître les spécificités propres à chacune de celles-ci à travers la structure des emplois occupés : les lettres-sciences humaines sont fortement marquées par leur orientation vers l'enseignement : professeurs des lycées et collèges, instituteurs pour les fonctionnaires, mais également maîtres-auxiliaires et enseignants des établissements privés ; au total, ces emplois représentent 55 % des emplois occupés par les diplômés de deuxième cycle dans ces spécialités.

Il en va presque de même pour les formations scientifiques (44 %), mais avec en outre, un accès important à des emplois d'ingénieurs, ce qui au total permet aux scientifiques d'occuper 57 % d'emplois de niveau supérieur ; si 19 % se retrouvent sur des emplois des professions intermédiaires (techniciens), les déclassements sont pratiquement exclus (3 % d'employés, 1 % d'ouvriers divers).

Les diplômés du secteur droit-sciences économiques-gestion-AES, se différencient largement des scientifiques et des littéraires. L'orientation vers l'enseignement devient ici marginale (3 % de professeurs de lycée, 8 % d'enseignants de niveau moyen). A l'inverse, l'accès aux emplois de cadres supérieurs d'entreprises devient très important (24 %), la fonction publique administrative supérieure avec 18 % venant en second. C'est donc plus de 44 % des diplômés dans ces spécialités qui sont cadres supérieurs avec une orientation vers l'entreprise qui rappelle la situation des écoles. Ce même phénomène se retrouve au niveau intermédiaire avec 25 % d'emplois des professions intermédiaires d'entreprise. Mais les déclassements demeurent supérieurs à ce qu'on observe pour les scientifiques (15 % d'employés).

La situation des titulaires d'un DEA-DESS scientifique ou du secteur droit-sciences économiques devient tout à fait comparable à celle des diplômés des écoles d'ingénieurs ou de commerce : 70 % d'ingénieurs et cadres supérieurs pour les premiers dont 48 % d'ingénieurs, 61 % de cadres supérieurs pour les seconds dont 43 % de cadres d'entreprises.

En revanche, le fait d'être titulaire d'un DEA-DESS de lettres-sciences humaines ne semble pas avoir un effet aussi favorable sur les premiers emplois occupés : 46 % de cadres supérieurs mais 28 % d'emplois enseignants de niveau moyen et 20 % de professions intermédiaires diverses. Seuls les employés diminuent fortement (5 %). On observera cependant que l'accès aux emplois de cadres supérieurs du secteur privé est beaucoup plus important (27 %) que dans le cas des diplômés du deuxième cycle (8 %).

3.3 - Le salaire résume la hiérarchie des diplômes et spécialités de formation, classifications et statuts de l'emploi (Graphique 34)

Le niveau du salaire est croissant avec le niveau de diplôme ou la "notoriété" des écoles. Certaines spécialités de formation sont systématiquement mieux rémunérées que d'autres.

Les salaires moyens nets en mars 1987 évoluent entre 6 000 et 12 000 francs. Au bas de la hiérarchie, un premier bloc est constitué par les diplômés d'IUT ou de STS dont les salaires évoluent autour de 6 500 francs avec peu de différences significatives selon les spécialités. Il est de 6 800 francs pour les sortants avec un DEUG, mais cette population est en moyenne plus âgée que les titulaires d'un DUT ou BTS, et a une ancienneté professionnelle plus grande.

Les titulaires d'une licence ou maîtrise de lettres, sciences humaines ou sciences de la nature et de la vie, sont au bas de l'échelle des salaires universitaires avec 7 200 francs environ, tandis que les salaires des titulaires de DEA-DESS dans ces mêmes spécialités ainsi que des diplômés de deuxième cycle de droit, sciences économiques se situent autour de 8 000 francs.

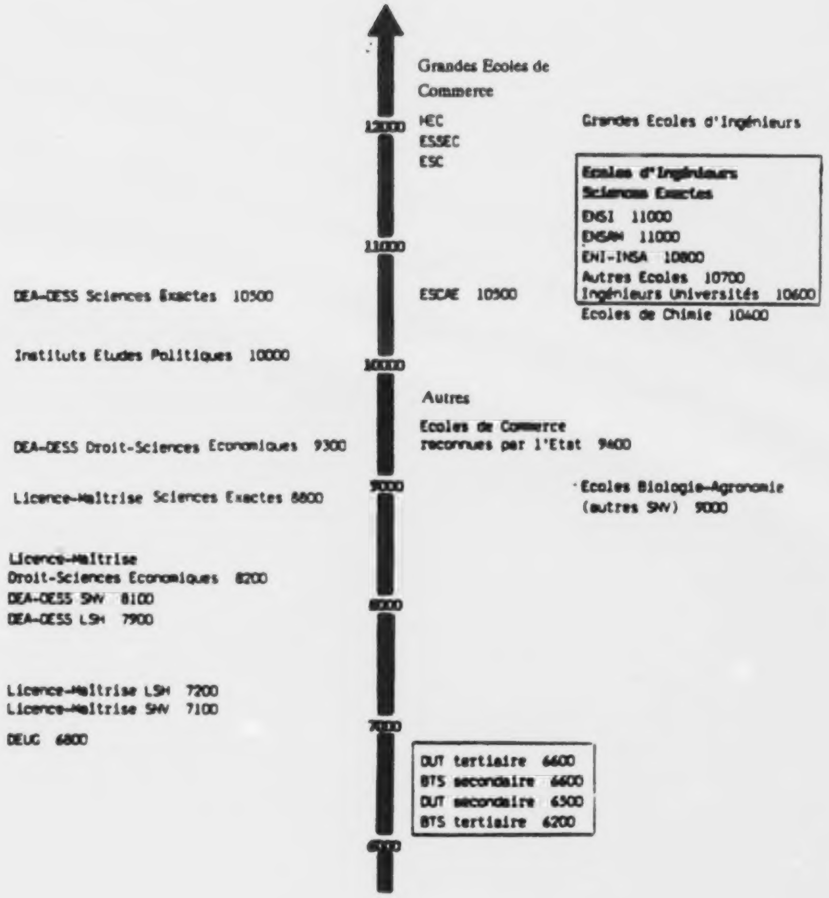
Les autres diplômés universitaires ont des niveaux de rémunération qui les rapprochent de ceux des écoles en général : deuxième cycle de sciences exactes (8 800 francs), DEA-DESS de droit, de sciences économiques et écoles de commerce autres que l'ESCAE (9 400 francs), DEA-DESS de sciences exactes (10 500 francs), Institut d'études politiques (10 000 francs).

Les diplômés d'écoles du secteur agricole et autres sciences de la nature et de la vie sont au bas de l'échelle avec 9 000 francs (les agronomes sont plus proches de 10 000 francs et les ingénieurs en agriculture ou les ingénieurs en techniques agricoles proches de 8 000 francs).

Les diplômés des écoles de chimie sont en position intermédiaire avec 10 400 francs. L'ensemble des diplômés des écoles d'ingénieurs des autres spécialités se situent dans une fourchette allant de 10 600 francs (ingénieurs universitaires à 11 000 francs ingénieurs des ENSI ou ENSAM). Les diplômés issus des ESCAE se placent à ce niveau (10 500 francs). Le sommet de la hiérarchie se distingue nettement avec les diplômés des grandes écoles d'ingénieurs ou de commerce (12 000 francs).

Graphique 34

Salaire mensuel (*) moyen par diplômes et spécialités regroupés



(*) Il s'agit du salaire net en mars 1987 (primes comprises), c'est-à-dire deux ans et demi environ après la fin des études (juin 1984). L'ancienneté professionnelle moyenne se situe entre un à deux ans. Les intervalles de confiance à 95 % varient de 200 à 300 francs selon les formations.

3.4 - Les premières mobilités professionnelles renforcent la liaison formation-emploi mais les écarts de départ demeurent

Les mobilités professionnelles intervenues entre 1984 et 1987 confirment les observations des enquêtes précédentes de l'Observatoire EVA (Cf. Annexe) : la même tendance à l'amélioration de la situation de départ peut être facilement mise en évidence. On a observé qu'une certaine stabilisation intervenait rapidement dans les deux ou trois ans pour ceux qui avaient débuté leur vie professionnelle dans des emplois précaires. Cela concerne en particulier le passage des enseignants non-titulaires sur des emplois de titulaires (professeurs certifiés ou agrégés, PEGC et instituteurs) dans les disciplines scientifiques et littéraires et, spécialement, en sciences exactes fondamentales et sciences naturelles, en lettres, langues (LCE) et histoire (Tableau 13).

L'accès fréquent au cours des études à des emplois d'auxiliaires de l'enseignement est donc suivi, pour une partie importante de ceux-ci, d'une stabilisation sur des emplois de titulaires dans les années qui suivent : ainsi, en sciences fondamentales, plus d'un tiers des enseignants non-titulaires au premier emploi sont devenus professeurs certifiés ou agrégés avant 1987 et 16 % professeurs de collèges ou instituteurs ; en sciences naturelles, la mobilité, bien qu'élevée, est cependant moins favorable avec 11 % de professeurs titulaires et 20 % de PEGC-instituteurs ; ces proportions sont respectivement de 17 à 15 % en lettres-langues et de 19 et 25 % en histoire.

55 % des diplômés du deuxième cycle ayant débuté sur un emploi d'auxiliaire de l'enseignement ont changé d'emploi avant mars 1987 et, pour la plupart, en se stabilisant sur des emplois de l'enseignement. Cependant cette stabilisation se fait, pour une part non négligeable, au prix d'un certain déclassement sur des emplois de professeurs de collège voire d'instituteurs.

Trois ans après la sortie de l'université, l'importance des emplois précaires de l'enseignement est très réduite. Dans quelques spécialités, la proportion plus élevée d'emplois précaires (sciences naturelles, sciences de la vie, lettres, langues, sociologie) est l'indice de difficultés d'insertion professionnelle.

De même 20 % de ceux qui occupaient des emplois intermédiaires (techniciens) au premier emploi sont devenus cadres supérieurs-ingénieurs avant 1987, proportion qui est de 11 % pour les employés mais ces derniers accèdent également aux professions intermédiaires (23 %).

A cet égard, la situation, déjà favorable au départ, des diplômés en sciences spécialisées se renforce par les mobilités ultérieures : plus de 30 % de ceux qui avaient débuté comme techniciens ont accédé à des emplois d'ingénieurs ou de cadres supérieurs avant 1987, cette proportion ne dépasse pas 10 % pour les sciences de la nature et de la vie.

Il en va de même pour les diplômés de sciences économiques-gestion : 31 % de ceux qui débutent sur des emploi des professions intermédiaires et 20 % des employés accèdent à des emplois de cadres supérieurs ; ces proportions n'étant respectivement que 18 et 14 % pour le droit et de 15 et 11 % pour l'AES.

Tableau 13

Effet de la mobilité professionnelle sur la structure des emplois au cours des trois années suivant la sortie de l'enseignement supérieur : diplômés des deuxièmes cycles universitaires

(en %)

Premiers et derniers emplois occupés	Sciences exactes		Sciences naturelles et de la vie		Droit (1)		Sciences éco. gestion (2)		ABS		Lettres, Langues		LEA		Histoire		Psychologie	
	1er emploi	Dernier emploi	1er emploi	Dernier emploi	1er emploi	Dernier emploi	1er emploi	Dernier emploi	1er emploi	Dernier emploi	1er emploi	Dernier emploi	1er emploi	Dernier emploi	1er emploi	Dernier emploi	1er emploi	Dernier emploi
Prof. certifiés agrégés	20	25	18	19	1	1	5	6	1	2	19	24	–	2	23	32	–	–
Prof. ens. sup., chercheurs	–	2	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Autres fonctionnaires supérieurs	8	9	–	1	20	24	4	7	12	15	2	2	–	–	5	6	6	5
Cadres supérieurs	1	2	4	5	14	22	14	25	7	15	3	5	2	9	3	8	15	23
Ingénieurs	23	31	5	6	–	–	4	6	4	1	–	1	–	–	–	–	–	–
S/T Ingénieurs cadres supérieurs	**53**	**69**	**27**	**32**	**36**	**47**	**27**	**45**	**21**	**33**	**25**	**33**	**3**	**11**	**31**	**46**	**22**	**28**
PEGC-Instituteurs	4	5	5	11	1	2	2	3	4	7	7	13	5	6	9	18	11	19
Enseignants non-titulaires (MA)	15	6	25	16	4	2	11	6	8	5	27	15	4	3	33	12	16	7
Enseignants secteur privé	5	3	7	8	3	1	3	3	–	1	12	11	4	2	7	6	2	1
S/T Prof. interm. enseignants	**24**	**14**	**37**	**35**	**8**	**5**	**16**	**12**	**12**	**13**	**46**	**39**	**13**	**11**	**49**	**36**	**29**	**27**
Prof. interm. fonctionnaires	2	2	2	1	7	8	3	5	13	12	1	3	1	3	2	3	4	6
Prof. interméd.	2	2	11	12	24	23	29	24	24	20	12	13	27	25	4	4	13	23
Techniciens	16	12	11	11	–	1	4	4	1	1	1	–	–	–	–	–	–	–
S/T Prof. interm. techniciens	**20**	**16**	**24**	**24**	**32**	**36**	**33**	**38**	**33**	**14**	**16**	**28**	**28**	**6**	**7**	**17**	**29**	
Employés	2	1	8	7	23	16	20	10	29	21	15	11	56	51	12	10	26	12
Ouvriers et divers	1	–	5	2	1	–	–	–	–	–	1	1	–	–	2	1	6	3
TOTAL %	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
EFFECTIFS	**2 141**	**2 674**	**1 096**	**1 097**	**3 594**	**3 621**	**1 978**	**1 984**	**747**	**770**	**3 436**	**3 507**	**575**	**567**	**968**	**966**	**370**	**378**

Source : CEREQ - Observatoire EVA, 1987.

(1) Y compris sciences politiques. (2) Y compris la MST "CF".

N.B. : **Premier emploi** : C'est le premier emploi pris par l'étudiant à la sortie de l'enseignement supérieur (en 1984), ou éventuellement avant l'obtention du diplôme.

Dernier emploi : C'est l'emploi en mars 1987, ou éventuellement le dernier emploi occupé si l'individu est inactif ou chômeur à cette date.

Tableau 14

Effet de la mobilité professionnelle sur la structure des emplois au cours des trois années suivant la sortie de l'enseignement supérieur : diplômés d'IUT et BTS

	DUT Second.	DUT Second.	DUT Tert.	DUT Tert.	BTS second.	BTS second.	BTS tert.	BTS tert.
	1er emploi	Emploi en 1987	1er emploi	Emploi en 1987	1er emploi	Emploi en 1987	1er emploi	Emploi en 1987
Cadres supérieurs	0,8	2,0	4,8	8,3	1,1	2,0	1,3	2,2
Fonct. moyens	2,3	4,9	3,4	6,0	2,4	4,1	2,2	4,3
Enst. non titu. et sec. pri.	6,3	5,6	4,3	4,1	8,4	6,0	4,1	4,0
Dessinateurs	9,6	8,0	0,0	0,0	14,9	13,8	0,4	0,2
Techniciens-A.M.	51,4	61,3	19.1	18,0	38,7	49,8	5,5	5,8
Autres prof. inter. Entrep.	11,9	10,7	24,4	26.6	14,1	14,6	18,3	26,0
S/T Prof. inter. Entrep	72,9	80,0	43,4	44,6	67,7	78,3	24,1	32,0
Secrétaires	0,1	0,0	4,6	3,2	0,8	0,4	29,9	26,8
Employés serv. compt.	0,4	0,2	14,7	16,1	0,0	0,0	12,3	11,3
Autres employés entr.	2,8	1,1	18,1	13,9	3,0	1,4	19,4	13,9
S/T Employés entr.	3,3	1,4	37,4	33,2	3,9	1,9	61,5	52,0
Employés F. publique	2,4	0,8	4,6	3,3	1,9	1,7	5,7	5,1
Ouvriers	11,8	5,2	1,9	0,5	14,7	6,1	1,1	0,3
Autres emplois	0,1	0,1	0,1	0,1	0,0	0,0	0,0	0,1
TOTAL	100,0	100,0	100.0	100.0	100,0	100,0	100,0	100,0
ENSEMBLE	4922	4530	6640	6047	5497	5116	9828	9139

Source : CEREQ - Observatoire EVA - 1987.

En revanche, pour les diplômés de psychologie, la mobilité n'améliore que partiellement la situation de ceux qui avaient débuté sur des emplois très déclassés d'employés (18 % accèdent à des emplois de cadres supérieurs du secteur privé) mais ceux qui occupent des emplois intermédiaires voient leur situation se pérenniser jusqu'en 1987.

Du côté des diplômés d'IUT et de STS, on observe le même phénomène à l'amélioration de la situation de départ en terme d'accès plus fréquent à des emplois des professions intermédiaires et à l'inverse à une diminution des déclassements sur des emplois d'ouvriers et d'employés.

Dans les spécialités secondaires et qu'il s'agisse des DUT et des BTS, les mobilités professionnelles renforcent l'accès aux emplois de techniciens sur la période, l'importance des professions intermédiaires d'entreprise devenant presque identique parmi les emplois occupés par les DUT et les BTS : 80 % pour les premiers contre 78,3 % pour les seconds. A l'inverse les emplois d'ouvriers qui étaient déjà peu nombreux parmi les emplois de début diminuent de plus de moitié sur la période (5 et 6 % respectivement pour les DUT et BTS en 1987).

Dans les spécialités tertiaires, l'effet des mobilités professionnelles est moindre, en particulier pour les DUT : les emplois d'employés régressent mais leur importance demeure forte (plus d'un tiers des emplois) tandis que les professions intermédiaires d'entreprises progressent peu sur la période ; pour les BTS, le poids des employés dans les emplois occupés s'il diminue entre les premiers emplois et les emplois en 1987 demeure élevé (52 % d'employés d'entreprises en 1987) mais les professions intermédiaires d'entreprises s'accroissent puisque leur importance relative passe de 24 % à 32 % des emplois occupés.

4 - *La transformation des premiers emplois des diplômés universitaires au cours des quinze dernières années*

La mission traditionnelle des universités scientifiques et littéraire a toujours été la formation des enseignants et des chercheurs. Avec la croissance importante du nombre d'étudiants au cours des années 60, les pouvoirs publics ont pris conscience de la nécessité d'offrir de nouveaux débouchés professionnels à ces étudiants. Dès le début des années 70, de nouvelles filières de formation à finalité professionnelle ont été organisées (maîtrise de sciences et technique, diplôme d'études supérieures spécialisées...). Les filières de formation traditionnelle ont été réorganisées pour mieux distinguer les formations fondamentales (orientées principalement vers l'enseignement et la recherche) et les formations plus appliquées ou à finalité professionnelle. Ces transformations ont été importantes en sciences, et beaucoup plus longue à se mettre en place en lettres où les effets sont encore peu sensibles (Voir première partie).

Les disciplines juridiques et économiques traditionnellement orientées vers la formation aux professions libérales (avocats...) ou professions tertiaires se sont diversifiées pour répondre à des besoins nouveaux.

De nouvelles disciplines ont pris leur essor (gestion...) ou des transformations pluridisciplinaires ont été organisées (administration économique et sociale - AES -).

En outre, les sorties de l'enseignement supérieur qui se situaient principalement en deuxième cycle, s'effectuent désormais entre la maîtrise et les DEA ou DESS dont les effectifs se sont fortement accrus (en particulier en droit et sciences économiques). L'administration centrale s'est contenté de définir les profils de ces nouvelles filières de formation et d'agréer les demandes d'ouverture de ces filières par les universités. Aucune planification n'a eu lieu en matière de flux d'étudiants à accepter selon les formations. Au mieux de nombreuses filières nouvelles ont instauré un numerus clausus à l'entrée.

Quels effets sur l'orientation et l'insertion professionnelle des étudiants ont eu toutes ces transformations ?

Toutes les filières nouvelles ont mis plusieurs années à prendre leur essor, mais elles ont finalement provoqué des modifications importantes des flux d'étudiants entre les filières scientifiques, - et entre les formations économiques et la gestion ou l'AES. Les effets sont modestes en lettres (développement long et modéré des langues étrangères appliquées - LEA -) mais le développement des sciences humaines (psychologie...) a été très rapide. Les débouchés professionnels de ces formations sont bien situés en dehors de l'enseignement et de la recherche.

Les formations fondamentales traditionnelles ont vu leur effectif se réduire, tout particulièrement en sciences, au profit des filières dite à finalité professionnelle.

Les débouchés traditionnels des filières fondamentales ne se sont pas modifiés. La forte majorité des étudiants issus des formations fondamentales sont toujours enseignants ou chercheurs. Finalement l'évolution de la structure des emplois occupés par les jeunes universitaires résulte de la modification interne des flux étudiants. Cette situation est la plus visible en sciences.

Dans toutes les disciplines, des spécialités de formation n'offrent pas aux diplômés les débouchés professionnels escomptés (sciences de la vie, psychologie, lettres étrangères appliquées...). Les raisons en sont diverses : orientation trop importante des jeunes vers la série D du baccalauréat (sciences naturelles et de la vie) créant un déséquilibre manifeste des flux étudiants vers les premiers cycles universitaires en sciences de la vie, au détriment des sciences exactes, difficulté à bien définir la cible professionnelle (24), décalage entre le public étudiant et les pratiques des entreprises (trop forte féminité de la filière Langues Etrangères Appliquées (LEA), orientant les diplômés vers les petites et moyennes entreprises peu disposées à recruter des jeunes femmes universitaires...).

Malgré cela le chômage étudiant ou la déqualification massive annoncée au début des années 80, n'a pas eu lieu.

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(24) C'est le cas en particulier de la filière Administration Economique et Sociale (AES).

4.1 - Forte réorientation des étudiants entre les spécialités de formation scientifiques. Plus grande diversité des emplois occupés. Maintien de la relation entre formation et emploi

La structure des emplois occupés à l'issue des universités s'est donc modifiée : 68 % des diplômés scientifiques sortis en 1975 (licence et maîtrise) avaient accédé à des emplois d'enseignants ; ils n'étaient plus que 63 % des sortants en 1978 et 44 % des sortants en 1984 (Tableau 15). Sur la même période, les emplois d'ingénieurs et cadres supérieurs (hors fonction publique), qui représentaient 10 % de la cohorte de 1975, passaient à plus de 25 % de la cohorte de 1984.

En outre, cette évolution s'est accompagnée d'une forte baisse des emplois enseignants non titulaires de la fonction publique qui régressent de plus de la moitié entre 1978 et 1984 (de 22 % à 9 %).

Ceci résulte d'un déplacement constant, depuis plus de dix ans, des étudiants des filières de formation scientifique traditionnelle (Tableau 16) préparant à l'enseignement et la recherche vers les filières de formation en sciences de l'ingénieur et de la vie (électronique, informatique, mécanique, chimie, biochimie, biologie) qui débouchent essentiellement sur les emplois d'ingénieurs et cadres techniques des entreprises.

L'emploi des diplômés scientifiques, principalement dans les sciences exactes, est en étroite relation avec la filière universitaire de formation. Il en va de même de la spécialité de l'emploi occupé.

Tableau 15

Les emplois occupés à la sortie des deuxièmes cycles scientifiques (Cohortes sorties en 1975, 1978 et 1984) (Licence, maîtrise, MST)

(en %)

EMPLOIS OCCUPÉS	DIPLÔMÉS SORTIS EN		
	1975 (1)	1978 (1)	1984 (2)
Fonctionnaires supérieurs	6	11	6
Autres cadres supérieurs			3
Ingénieurs	10	10	22
Chercheurs (Professeurs d'enseignement supérieur)			2
Professeurs certifiés agrégés	34	23	23
S/Total Ingénieurs et cadres supérieurs	**50**	**44**	**57**
PEGC-Instituteurs	5	4	7
Enseignants non titulaires	22	22	9
Enseignants secteur privé	7	14	5
S/Total Professions intermédiaires et enseignants	**34**	**40**	**21**
Professions intermédiaires fonctionnaires	3	4	2
Professions intermédiaires			5
Techniciens	12	8	12
S/Total Professions intermédiaires	**15**	**12**	**19**
Employés	1	2	3
Ouvriers et divers	1	1	1
TOTAL %	**100**	**100**	**100**
EFFECTIFS	**4 845**	**3 849**	**3 448**

Source : CEREQ, Observatoire EVA 1980, 1983, 1987.

(1) Emplois occupés vingt et un mois après la sortie, c'est-à-dire en 1977 et 1980.

(2) Derniers emplois occupés en 1987 ou avant.

Tableau 16

Evolution du pourcentage de sortants des spécialités scientifiques de 1978 à 1984

SPÉCIALITÉS	LICENCE - MAÎTRISE		DEA - DESS	
	Cohorte sortie en		Cohorte sortie en	
	1978	1984	1978	1984
Sciences exactes fondamentales (math., physique)	56	25	–	19
Sciences exactes spécialisées (sciences de l'ingénieur, électronique, informatique, mécanique)	16	39	45	39
Sciences naturelles, sciences de la terre	18	13	15	14
Sciences de la vie, chimie	10	22	40	27
TOTAL % **EFFECTIFS**	100 3 893	100 3 647	100 1 143	100 1 696

Source : CEREQ, Observatoire EVA 1983, 1987. Etudiants français sortant au terme d'une formation initiale ; à l'exclusion de toute poursuite d'études en thèse ou hors de l'université.

La stabilité des structures d'emplois est remarquable et on est frappé par la similitude des profils des premiers emplois occupés par la cohorte sortie en 1984 avec ceux des cohortes précédemment étudiées par le CEREQ (1975 et 1978) (25) (Cf. Tableau 17).

En sciences exactes fondamentales : les professeurs et chercheurs. En sciences appliquées : les ingénieurs et techniciens.

Moins de trois ans après leur sortie de l'université en 1984 (mars 1987), 85 % des diplômés d'un deuxième cycle de sciences-mathématiques ou physique (sciences exactes fondamentales) et 70 % des diplômés de sciences naturelles sont enseignants. Ces proportions étaient respectivement de 80 % et 72 % pour la cohorte sortie en 1978. Mais les diplômés de 1984 sont deux fois moins nombreux que ceux de 1978 dans les mêmes filières de formation.

Avec un deuxième cycle d'électronique, informatique, mécanique (sciences exactes spécialisées), 63 % des diplômés de la cohorte de 1984 sont devenus ingénieurs (études, recherche dans le secteur privé) ou cadres supérieurs (inspecteurs P et T) et 24 % techniciens (informatique). Ils étaient respectivement 59 % et 31 % parmi les diplômés de 1978. Mais la cohorte de 1984 est deux fois plus nombreuse que celle de 1978.

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(25) F. Pottier, Cinq ans de vie professionnelle des étudiants issus de l'enseignement supérieur scientifique-Comparaison de deux cohortes sorties en 1975 et 1978 - Collection des études n° 30, CEREQ, mars 1987.

Tableau 17

Les premiers emplois occupés par les diplômés scientifiques de deuxième cycle (Licence, Maîtrise)

(en %)

PREMIERS EMPLOIS	Sciences exactes fondamentales			Sciences exactes spécialisées			Sciences naturelles			Sciences de la vie, chimie		
	Cohorte sortie en			Cohorte sortie en			Cohorte sortie en			Cohorte sortie en		
	1975	1978	1984	1975	1978	1984	1975	1978	1984	1975	1978	1984
Ingénieurs et cadres supérieurs	8	14	7	38	50	51	–	6	7	17	20	10
Techniciens et cadres moyens	5	5	4	30	35	32	3	16	13	27	33	31
Enseignants titulaires	47	36	50	8	4	6	38	14	36	5	3	14
Enseignants non titulaires et secteur privé	36	44	35	19	8	9	56	58	34	40	24	30
Employés et divers	4	1	4	5	3	2	3	6	10	11	20	15
TOTAL % **EFFECTIFS**	100 2 109	100 2 143	100 886	100 933	100 602	100 1 255	100 576	100 667	100 445	100 1 137	100 371	100 651

Source : CEREQ - Observatoire EVA, 1980, 1983 et 1987.

L'emploi en sciences de la vie : toujours la crise.

Les diplômés d'un deuxième cycle en sciences de la vie (26) n'ont pas de créneau d'emplois spécifiques à l'intérieur d'un ensemble disciplinaire en crise depuis des années. L'emploi, en 1987, des diplômés de 1984 est identique à celui de la cohorte de 1978 : 13 % d'ingénieurs ou cadres supérieurs, 32 % de techniciens mais, là également, la cohorte de 1984 est le double de celle de 1978. Les emplois d'enseignants (souvent non-titulaires) sont dominants (42 %).

Si les relations qui unissent les filières de formation universitaires à des catégorie d'emplois sont demeurées particulièrement stables, la structure des débouchés de l'ensemble des diplômés scientifiques a été affectée par une modification interne du flux de diplômés qui s'est traduite par une croissance des sciences exactes spécialisées et des sciences de la vie aux dépens des sciences fondamentales (mathématiques, physiques) et des sciences naturelles avec, pour conséquence (on l'a vu ci-dessus) un accroissement des emplois d'ingénieurs.

Un plus pour les diplômés scientifiques de la première année de troisième cycle (Tableau 18).

Les diplômes d'études approfondies (DEA) sont la première étape de préparation d'un doctorat ; beaucoup de DEA jouent cependant le rôle d'un diplôme d'études supérieures spécialisées (DESS), c'est-à-dire d'un diplôme à finalité professionnelle de niveau "bac + 5".

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(26) Les diplômés d'un deuxième cycle de chimie seul étant trop peu nombreux, ils sont regroupés avec les diplômés de sciences de la vie, bien que leur situation professionnelle soit, en général, meilleure que celle des diplômés en sciences de la vie.

L'obtention d'un DEA en sciences exactes présente un avantage certain par rapport aux diplômes de deuxième cycle. Les titulaires de DEA sont plus nombreux à occuper des situations d'ingénieurs, chercheurs ou cadres supérieurs (études et recherches en particulier) : 77 % des DEA de sciences exactes et seulement 39 % des DEA de sciences de la vie. (Ils représentaient respectivement 64 % et 44 % de la cohorte 1978).

4.2 - Permanence des avantages mais des difficultés dans certaines spécialités juridiques ou économiques (Tableau 19)

La structure des emplois occupés en 1987 des diplômés de 1984 montre une étonnante stabilité par rapport aux cohortes de diplômés des enquêtes antérieures et révèle la permanence de quelques difficultés d'emploi dans certaines spécialités comme l'AES, avec plus de 20 % d'emplois très déclassées (employés) et, dans une moindre mesure, les disciplines juridiques (14-15 % d'employés).

L'accès à des emplois de niveau supérieur concerne cependant près de la moitié des diplômés de deuxième cycle en droit public (52 %) et en gestion (50 %), 45 % en droit privé, 42 % en sciences économiques mais seulement 33 % des diplômés en AES.

Tableau 18

Emploi occupés en 1987 par les diplômés sortis de l'université en 1984 avec un DEA ou un DESS

Spécialités du diplôme Dernier emploi en 1987 ou avant	Sciences exactes	Sciences naturelles et de la vie	Sous-total Sciences	Droit	Sciences éco., gestion	Sous-total droit, Sciences éco. (1)	Lettres, langues	Psycho	Sous-total LSH (2)	TOTAL (3)
Prof. certif. agrégé	7	8	8	–	3	2	26	–	10	5
Prof. ens. sup-cherc.	5	6	5	0	6	0	–	–	1	2
Autre fonct. sup.	1	3	2	19	6	13	1	2	4	8
Ingénieur	69	25	54	–	6	3	4	–	1	14
Autre cadre supérieur	2	5	2	41	48	43	18	48	32	31
S/T. Ing. et cadre sup.	**84**	**47**	**71**	**60**	**63**	**61**	**49**	**50**	**48**	**60**
PEGC-Instituteur	1	–	1	1	1	1	6	5	5	2
Enseig. non titulaire	6	12	8	2	3	2	19	6	11	6
Enseig. secteur privé	1	12	5	1	1	1	5	8	7	3
S/T. Enseig. prof. intermédiaires	**8**	**24**	**14**	**4**	**5**	**4**	**30**	**19**	**23**	**11**
Prof. interm. fonction.	1	2	1	4	3	3	–	6	5	3
Prof. interm. tech.	6	20	11	22	21	22	14	18	19	19
S/T. Prof. intermédi.	**7**	**22**	**12**	**26**	**24**	**25**	**14**	**24**	**24**	**22**
Employé	–	4	1	8	8	9	7	7	5	6
Autre emploi	1	3	2	2	–	1	–	–	–	1
TOTAL %	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
EFFECTIFS	**738**	**386**	**1 124**	**1 412**	**1 066**	**2 478**	**273**	**550**	**1 215**	**5 127**

Source : CEREQ - Observatoire EVA - 1987.

(1) Y compris sciences politiques et MST "CF".

(2) Y compris sociologie, philosophie, arts, histoire, géographique, LEA.

(3) Y compris autres disciplines.

Tableau 19

Emplois occupés par les diplômés de deuxième cycle en droit et sciences économiques (cohortes 1980 et 1984)

(en %)

EMPLOIS OCCUPÉS	Droit		Sciences éco.		Gestion		ABS		TOTAL (1)	
	Cohorte sortie en		Cohorte sortie en		Cohorte sortie en		Cohorte sortie en		Cohorte sortie en	
	1980	1984	1980	1984	1980	1984	1980	1984	1980	1984
Fonctionnaires supérieurs	26	25	20	16	2	15	13	17	21	21
Cadres supérieurs	21	22	16	26	39	35	9	16	24	24
Prof. interméd. fonction.	14	10	9	8	3	6	11	19	11	11
Prof. intermédiaires	14	24	35	27	34	30	21	21	21	25
Enseignants non titulaires et secteur privé	6	3	8	13	9	4	12	6	8	5
Employés	12	16	7	10	12	9	28	21	11	15
Autres emplois	7	(ε)	5	1	1	(ε)	6	–	5	(ε)
TOTAL % **EFFECTIFS**	**100** **2 418**	**100** **3 543**	**100** **992**	**100** **950**	**100** **541**	**100** **632**	**100** **296**	**100** **770**	**100** **4 284**	**100** **6 375**

Source : CEREQ, Observatoire EVA, 1987.

(1) Y compris sciences politiques, MST "CF".

(*) Pour la cohorte de 1980, il s'agit de l'emploi en 1982 ; pour celle de 1984, il s'agit du dernier emploi occupé en 1987 ou avant.

La situation était pratiquement similaire dans les enquêtes antérieures : l'ensemble des diplômés de deuxième cycle en droit-sciences économiques de la cohorte de 1980 avaient accédé à des emplois de cadres supérieurs dans 45 % des cas ; cette proportion est identique dans la cohorte 1984. De même, il y avait 11 % d'employés dans la cohorte de 1980, il y en a près de 15 % parmi les diplômés sortis en 1984 (27).

Un diplôme de troisième cycle (DEA-DESS) permet un accès plus fréquent à des emplois de niveau supérieur (61 %), en particulier de cadres supérieurs du secteur privé (43 % contre 24 % des diplômés de deuxième cycle) (Tableau 9).

C'est donc bien au niveau de la première année du troisième cycle et avec le développement important des filières professionnelles (DESS) que se fait l'accès privilégié aux emplois de cadres supérieurs dans les entreprises.

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(27) Cf. A. Charlot, L'insertion professionnelle des étudiants en droit et sciences économiques. Comparaison 1978-1982. Collection des études n° 21, CEREQ, février 1986.

4.3 - L'emploi littéraire est marqué par la reprise des recrutements de professeurs

L'enseignement demeure la source principale d'emplois auxquels accèdent les littéraires : 67 % des diplômés de deuxième cycle en lettres sont enseignants en 1987, 61 % en langues (Tableau 20). Ces proportions étaient respectivement de 68 % et de 66 % dans la cohorte 1981 (28). Mais la reprise et le développement récent des recrutements par concours depuis 1981 a eu une influence favorable sur le statut de ces emplois : en 1987, on a respectivement en lettres et langues 31 % et 20 % de professeurs titulaires (certifiés-agrégés) contre 14 et 17 % de non-titulaires.

L'amélioration de la situation, déjà sensible en 1983, s'est donc poursuivie avec une part plus importante de professeurs titulaires dans les recrutements d'enseignants.

En revanche, les diplômés de la filière langues étrangères appliquées (LEA), dont la finalité professionnelle se situe hors de l'enseignement, rencontrent toujours les mêmes difficultés pour s'insérer à un niveau satisfaisant : plus de 50 % n'occupent que des postes d'employés, proportion qui n'était que de 34 % dans la cohorte de 1980. La reprise des recrutements de titulaires ne leur a pas profité (2 % de professeurs titulaires) et à l'inverse la diminution des recrutements de non-titulaires les a touchés directement (3 % en 1987 contre 15 % en 1983).

La même orientation vers l'enseignement existe pour les diplômés du troisième cycle (DEA-DESS) : 56 % en lettres et langues sont enseignants (Tableau 18 ci-dessus).

Toujours des difficultés pour les diplômés de deuxième cycle en sciences humaines

Du côté des sciences humaines, certaines spécialités ont également bénéficié du développement des recrutements de professeurs titulaires : l'histoire (32 % de certifiés-agrégés), la philosophie (46 %), les spécialités artistiques (38 %) et, dans une moindre mesure, la géographie (19 %). Aussi ces spécialités conduisent une majorité de leurs diplômés vers des emplois enseignants en 1987 : philosophie (78 %), géographie (62 %), histoire (68 %), arts (56 %) (Tableau 20).

A l'inverse, les diplômés du deuxième cycle en sociologie et en psychologie s'orientent toujours peu vers les emplois de l'enseignement : 34 % en sociologie dont 17 % de non-titulaires, 28 % en psychologie dont 19 % d'instituteurs, ou PEGC et 7 % de non-titulaires, situation voisine de celle observée pour la cohorte de 1981.

Si 28 % des diplômés du deuxième cycle en psychologie accèdent à des emplois de niveau supérieur, essentiellement du secteur privé (psychologues libéraux, cadres administratifs et des services de recrutement...), il en va différemment pour les sociologues (11 %), un tiers occupant des professions intermédiaires, plus de 18 % étant déclassés sur des postes d'employés ou précarisés : 17 % enseignants non-titulaires (Tableau 20).

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(28) A. Charlot, L'insertion professionnelle des étudiants en lettres-sciences humaines, comparaison 1977-1983. Collection des études n° 32, CEREQ, octobre 1987.

Mais le diplôme de troisième cycle (Tableau 19) et, singulièrement, le DESS permet, en psychologie, l'accès aux emplois de cadres supérieurs du secteur privé (48 %) : psychologues libéraux (28 %), cadres supérieurs chargés du recrutement, études (9 %)...

Tableau 20

Emplois occupés par les diplômés du deuxième cycle en lettres et sciences humaines (cohortes 1981 et 1984)

(en %)

EMPLOIS OCCUPÉS	Lettres		Langues		LEA		Arts		Histoire		Géographie		Psycho		Ensemble LSH (*)	
	Cohorte sortie en		Cohorte sortie en		Cohorte sortie en		Cohorte sortie en		Cohorte sortie en		Cohorte sortie en		Cohorte sortie en			
	81	84	81	84	81	84	81	84	81	84	81	84	81	84	81	84
Prof. certifiés, agrégés	19	31	16	20	–	2	40	38	15	32	8	19	3	–	16	22
Autres fonct. supérieurs	3	4	2	2	–	–	–	5	8	6	10	4	3	5	3	3
Cadres supérieurs	3	8	3	4	5	9	1	10	4	8	7	2	9	23	5	9
PEGC Instituteurs	13	14	10	12	7	6	3	9	12	18	12	26	21	19	10	14
Autres professions interm. fonctionnaires	10	1	5	4	6	3	3	2	1	3	8	6	13	6	8	4
Prof. interm. techniciens	9	12	7	14	26	25	10	14	9	4	20	15	29	23	12	13
Enseignants non titulaires et du secteur privé	26	22	40	29	21	5	27	9	28	18	20	15	4	7	31	19
Employés	5	7	16	13	34	51	12	5	12	10	13	13	12	12	13	14
Autres emplois	2	1	1	1	1	–	4	8	1	1	2	–	6	3	2	2
TOTAL % EFFECTIFS	100 1396	100 1375	100 1923	100 2122	100 386	100 567	100 408	100 725	100 638	100 966	100 232	100 325	100 315	100 378	100 5602	100 7143

Source : CEREQ, Observatoire EVA, 1983 et 1987.

(1) Y compris philosophie, sociologie, information-communication.

(2) Pour la cohorte 1981, il s'agit de l'emploi en 1983 ; pour la cohorte 1984, il s'agit du dernier emploi occupé en 1987 ou avant.

ANNEXE 1

Les enquêtes de l'Observatoire des entrées dans la vie active (EVA) auprès des sortants de l'enseignement supérieur (niveau I à III)

- La première vague d'enquêtes (enquêtes d'insertion) 1976-1978 suivies d'enquêtes de cheminement professionnel cinq ans après la sortie de l'enseignement supérieur.

- cohorte sortie en 1975 des études universitaires scientifiques et interrogée en 1976 (inscrits en premier, second et troisième cycle en 1974-75 et non-réinscrits en 1975-76 dans l'enseignement supérieur) ; et cohorte sortie en 1975 d'un échantillon d'écoles d'ingénieurs volontaires pour participer à l'enquête et interrogée en 1976. Ces individus ont été interrogés une deuxième fois en mars 1980 (enquête de cheminement professionnel) ;

- cohorte sortie en 1976 des études universitaires de lettres et sciences humaines et interrogée en 1977 (mars) avec la même définition du champ que ci-dessus. Les individus ont été interrogés une deuxième fois en mars 1981 ;

- cohorte sortie en 1977 des études de droit-sciences économiques et interrogée en 1978 (mars) avec la même définition du champ que ci-dessus. Les individus ont été interrogés une deuxième fois en mars 1982.

- La deuxième vague d'enquêtes 1980-1983 : enquête unique de cheminement professionnel à deux ans après la sortie de l'enseignement supérieur.

- cohorte sortie en 1978 des études universitaires scientifiques et interrogée en 1980 : inscrits en premier ou second cycle en 1977-78 et non-réinscrits en premier ou second cycle en 1978-79 ;

- cohorte sortie en 1980 des études universitaires de droit-sciences économiques et interrogée en 1982 avec la même définition du champ que ci-dessus ;

- cohorte sortie en 1981 des études universitaires de lettres-sciences humaines et interrogée en 1983 avec la même définition du champ que ci-dessus.

- **La troisième vague d'enquêtes (enquête de cheminement professionnel de mars 1987, trois ans après la sortie de l'enseignement supérieur).**

L'enquête du CEREQ de 1987 constitue la troisième vague d'enquêtes effectuées auprès des diplômés de l'enseignement supérieur. Son champ est beaucoup plus large que celui des enquêtes précédentes. Elle a concerné les diplômés en 1984 d'instituts universitaires de technologie (IUT), des sections de techniciens supérieurs (STS), des sortants de nationalité française d'un deuxième cycle universitaire ou première année de troisième cycle (diplômes d'études approfondies ou diplômes d'études supérieures spécialisées) en sciences, lettres et sciences humaines, droit, sciences économiques ou gestion, des diplômés d'écoles d'ingénieurs (à l'exception des diplômés par la voie de la formation continue et des écoles sous tutelle du ministère de la Défense), des écoles de commerce publiques ou privées reconnues par l'Etat. Sont exclues du champ, les formations médicales, paramédicales ou sociales ainsi que les formations artistiques. L'enquête s'est déroulée par voie postale. Elle a été complétée par une enquête par interviews auprès d'un échantillon de non répondants à l'enquête nationale. Le taux de sondage moyen est de l'ordre d'un tiers et le taux de réponse net est de 61 %. On dispose ainsi de 26 000 questionnaires exploitables.

ANNEXE 2

LES PRINCIPAUX INDICATEURS

Les conditions de l'insertion professionnelle des jeunes sont repérées par trois indicateurs :

- la durée d'accès au premier emploi ;
- la stabilité du premier emploi occupé ou des emplois ultérieurs ;
- la durée totale de chômage au cours de la période d'insertion professionnelle de juin 1984 à mars 1987.

- Durée d'accès à l'emploi

Le passage des garçons par le service national, la préparation des concours de l'enseignement pour nombre d'étudiants des universités expliquent l'étalement de l'insertion professionnelle des diplômés de l'enseignement supérieur sur plusieurs années. La durée d'accès à l'emploi mesure l'intervalle de temps entre le dernier diplôme ou concours obtenu en 1984 ou avant l'entrée dans le premier emploi (les emplois de vacances ou les stages liés à la formation ne sont pas considérées comme un emploi), en déduisant les périodes de service national ou d'études à temps plein. Le tableau ci-après fournit la proportion des jeunes obtenant un emploi en moins de six mois (1ère colonne) et la proportion totale ayant accédé à un premier emploi en moins d'un an (2ème colonne).

- Accès à un emploi stable

Le premier emploi occupé peut être stable (contrat à durée non limitée, fonctionnaire...) ou précaire (contrat à durée limitée, intérim, vacation...). Le tableau ci-après fournit la proportion de jeunes qui ont accédé directement à un premier emploi stable, et ceux qui y ont accédé après passage par un ou plusieurs emplois précaires, cette transition ayant pu se faire par mobilité interne (titularisation...) ou externe (changement d'entreprise), et ceux qui sont toujours en emploi précaire (3ème, 4ème et 5ème colonnes). Le complément à 100 % de ces trois colonnes donne le pourcentage de jeunes n'ayant jamais occupé d'emploi et qui sont en recherche d'un premier emploi au moment de l'enquête.

- Durée de chômage

La précarité éventuelle des premiers emplois peut entraîner un passage plus ou moins important par la recherche d'emploi : c'est pourquoi on a totalisé les périodes de chômage connues par les jeunes entre juin 1984 et mars 1987. Le tableau indique la proportion de jeunes diplômés dont la durée totale de chômage a été supérieure à un an (6ème colonne).

- Effectif actif

La dernière colonne indique le nombre de jeunes appartenant au champ de l'enquête (Cf. Tableaux ci-après) qui ont occupé au moins un emploi avant l'enquête ou sont en recherche d'emploi à l'enquête.

LES PRINCIPAUX INDICATEURS D'INSERTION PROFESSIONNELLE

Hommes

	Emploi en moins de 6 mois	Emploi en moins d'1 an	Accès direct emploi stable	Accès indirect emploi stable	Emploi précaire	Chômage + d'1 an	Effctif actif
DUT SECONDAIRE	68	90	47	26	25	5,1	4 733
DUT TERTIAIRE	72	91	64	21	13	6,4	3 246
S/TOT. DUT	70	91	54	24	20	5,6	7 979
BTS SECONDAIRE	76	92	49	27	23	4,2	5 368
BTS TERTIAIRE	77	92	67	19	13	3,0	2 153
S/TOT. BTS	77	92	54	25	20	3,9	7 521
LIC/MAITR/SCIENCES	79	90	65	18	15	1,5	2 155
LIC/MAIT.DROIT-SC ECO. ET DIPL. I.E.P	63	84	73	13	11	5,5	4 125
LIC/MAITR/LETT-SC.HUM.	80	91	54	23	24	7,8	1 957
LIC/MAITR/AUTRES.INDT.	65	82	65	8	24	8,8	281
S/TOT.2EME CYCLE	71	87	67	16	15	5,1	8 518
DEA-DESS SCIENCES	70	92	67	15	16	5,4	990
DEA-DESS DROIT-SC ECO.	57	83	72	19	9	6,0	1 281
DEA-DESS LETT-SC HUM.	67	87	35	25	35	8,4	350
DEA-DESS AUTRES. INDT.	83	96	70	11	19	1,8	114
S/TOT.DEA-DESS	64	87	65	18	15	6,0	2 735
HEC-ESSEC-ESCP	80	96	88	9	4	0,5	607
ESCAE	81	96	85	11	5	0,9	696
AUTRES ECOLES COMMERCE	68	88	74	21	4	4,2	412
S/TOT EC. COMMERCE	77	94	83	12	4	1,5	1 715
EC. ING SC EXACTES	65	97	86	9	5	0,4	5 033
EC. ING CHIMIE	74	98	82	8	10	2,2	308
EC.ING.AGRO-AGRIC.	65	93	55	21	21	8,8	788
S/TOT EC. INGENIEURS	82	96	82	11	7	0,8	6 219
TOTAL	74	91	64	19	15	4,1	34 687

Femmes

	Emploi en moins de 6 mois	Emploi en moins d'1 an	Accès direct emploi stable	Accès indirect emploi stable	Emploi précaire	Chômage + d'1 an	Effectif actif
DUT SECONDAIRE	50	80	38	35	25	16,1	1 144
DUT TERTIAIRE	60	89	54	28	18	12,3	4 344
S/TOT. DUT	58	87	51	29	19	13,1	5 488
BTS SECONDAIRE	61	86	43	33	24	10,2	854
BTS TERTIAIRE	73	94	49	34	17	7,0	8 685
S/TOT. BTS	72	93	48	34	17	7,3	9 539
LIC/MAITR/SCIENCES	74	90	56	23	21	7,2	1 467
LIC/MAIT.DROIT-SC ECO. ET DIPL. I.E.P	53	80	64	20	15	12.6	3 608
LIC/MAITR/LETT-SC.HUM.	70	85	46	25	27	9.0	5 600
LIC/MAITR/AUTRES.INDT.	57	83	64	18	18	7,5	488
S/TOT.2EME CYCLE	85	84	54	23	22	9,9	11 163
DEA-DESS SCIENCES	65	89	54	16	31	7,6	375
DEA-DESS DROIT-SC ECO.	44	74	62	20	16	13,7	1 409
DEA-DESS LETT-SC HUM.	61	80	43	23	32	20,9	1 001
DEA-DESS AUTRES. INDT.	54	94	45	27	29	5,5	292
S/TOT.DEA-DESS	53	80	53	21	24	14,5	3 077
HEC-ESSEC-ESCP	69	91	86	13	1	1,7	403
ESCAE	64	92	81	14	5	4,4	479
AUTRES ECOLES COMMERCE	72	99	71	21	8	5,2	294
S/TOT EC. COMMERCE	67	93	80	15	4	3,7	1 176
EC. ING SC EXACTES	73	92	84	9	6	0,6	731
EC. ING CHIMIE	58	81	66	31	4	3,6	123
EC. ING. AGRO-AGRIC.	32	68	39	24	35	12,3	273
S/TOT EC. INGENIEURS	62	85	71	15	13	3,7	1 127
TOTAL	65	87	53	27	19	9,6	31 570

ANNEXE 3

SIGLES UTILISES

AGREG	Agrégation de l'enseignement secondaire (professeur agrégé)
AES	Administration économique et sociale
BEP	Brevet Etudes Professionnelles
BTP	Bâtiment - Travaux publics
BTS-STS	Brevet de technicien supérieur - Section de technicien supérieur
CAP	Certificat d'Aptitude Professionnelle
CAPES	Certificat d'aptitude à l'enseignement du second degré (professeur certifié)
CAPEPS	Certificat d'aptitude à l'éducation physique et sportive (professeur certifié)
CAPET	Certificat d'aptitude à l'enseignement technique (professeur certifié)
DEA	Diplôme d'études approfondies
DEP	Direction de l'évaluation et de la prospective (Ministère de l'Education nationale)
DESS	Diplôme d'études supérieures spécialisées
DU	Diplôme d'université
DUT-IUT	Diplôme universitaire de technologie - Institut universitaire de technologie
ENI	Ecole Nationale d'Ingénieurs
ENSAM	Ecole Nationale Supérieure des Arts et Métiers
ENSI	Ecole Nationale Supérieure d'Ingénieurs
ESC	Ecole supérieure de commerce
ESCAE	Ecole supérieure de commerce et d'administration des entreprises
ESSEC	Ecole supérieure des sciences économiques et commerciales
HEC	Ecole des hautes études commerciales
IAA	Industries agricoles et alimentaires

INSA	Institut National des Sciences Appliquées
INSEE	Institut National de la Statistique et des Etudes Economiques
LCE	Langues et civilisations étrangères
LEA	Langues étrangères appliquées
LSH	Lettres et sciences humaines
MA-MI	Maître auxiliaire, maître d'internat
MASS	Mathématiques appliquées et sciences sociales
MEN	Ministère de l'Education nationale
MIAGE	Maîtrise d'informatique appliquée à la gestion
MSG	Maîtrise de sciences de gestion
MST	Maîtrise de sciences et techniques
MST "CF"	Maîtrise de Sciences et Techniques "Comptabilité-Finance"
PCEM	Premier cycle des études médicales
PEGC	Professeur d'enseignement général de collège
PLP	Professeur de Lycée professionnel
TIA	Techniques des industries alimentaires
PTT	Postes et télécommunications
TUC	Travaux d'Utilité Collective
SIVP	Stage d'Initiation à la Vie Professionnelle
SNV	Sciences Naturelles et de la Vie

ITALIE

ITALY

Federico Bussi

Centro Studi Investimenti Sociali

SUMMARY OF MAIN CONCLUSIONS

The difference between higher education in Italy and other OECD countries can be found in institutional and social factors:

- **The institutional factor**: 1987, 58.9% of graduates were to be found in the sixth level. However, in the second half of the eighties, this situation began to change, because of shifts in the supply of higher education opportunities.

- **The social factor**: Prior to the seventies, higher education wason the preparation of executives and professionals, and access to higher education was restricted to those who held certain high-school degrees and who could afford a long-term university course. Even a numerus-clausus ratio operated some fields of study.

  In 1969 the liberalisation of access to university, with acceptance of any high-school degree, together with an improvement in the economic situation of the country, led to an increased pressure on the higher education system during the seventies that lasted well into the eighties.

  University was seen as the route to social mobility for many Italian families, and, as a consequence, enrolments increased considerably. However, the liberalisation of access to university did not produce the expected "boom" of output because more subtle factors of social selection still continued to operate.

The main conclusions emerging from this report fall into two main areas: outflows from the higher education system; analysis of employment prospects

Data concerning **higher education outflows** reveal that:

- the proportion of higher education leavers to total leavers increased from 1982 to 1986; in absolute terms, the number of graduates from higher education is increasing;

- 1987 and 1988 saw a significant numerical increase in graduates from traditional university courses, but as a proportion of total higher education leavers, a decrease, due to the greater number of graduates from new types of courses, especially those run by private and non-traditional institutions and agencies;

- the most important shifts in the patterns of enrolments and output in different subject areas relate to employment opportunities, with a growth in economic disciplines and law at Level 6 and computer science, office automation, fashion and marketing at Level 5, where

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there are good prospects for employment, and a decline in disciplines such as literature, which traditionally provided a wide recruitment base for the public sector, or medicine, where employment prospects are very much reduced.

- there is a tendency towards a rationalization of Italian higher education both through extension of institutional programming, to provide new opportunities, and through changing patterns of student behaviour, for example, reducation of 1st year dropout rates and fewer students working in paid employment throughout their university studies.

The analysis of **employment prospects** shows:

- a slight increase in the proportion of graduates to jobholders in the last five years;
- in 1988, 90% of graduates found employment in the services sector and 9% in industry;
- within the service sector, 50% of graduates find employment in public services;
- while professions such as public employee and teacher still represent the largest destination for graduates, this position is declining alongside a growth in independent professional positions;
- graduates' unemployment problems are fewer than those of leavers from other educational levels and any difficulties they experience are mostly related to their transition to the labour market and to their first employment;
- for most graduates, their initial entry into employment is characterised by long periods of job instability before finding stable employment;
- job instability and difficulties in transition from higher education to employment vary considerably between subject groups: with graduates in subjects such as economic disciplines and engineering having less difficulty than graduates from disciplines such as medicine and literature who have problems of insertion and job stability.

In the middle eighties, higher education in Italy went through an "appeal-crisis", where the advantage of holding a higher education degree vanished in the face of graduate unemployment and where a higher education degree became less "exclusive" because of the policy of liberalisation. This "appeal-crisis" fostered the creation of new higher education opportunities, provided by public and private institutions. These new opportunities were often in the form of 1-3 year short term courses in the "employment attractive" fields of study - computer science, fashion, new technologies, foreign languages, sales, marketing, environmental matters. Both young people and the demands of the labour market were satisfied by these new forms of higher education offers. For young people it meant an earlier insertion into the world of work, and the labour market was being supplied with qualified labour in areas of skill need. The labour market has changed substantially, both as a result of new emerging professions and new technologies which have brought about a standardisation of tasks requiring middle level qualifications and skills. These changes are not always taken into account by educational agencies in the provision of higher education.

In recent years the "appeal-crisis" has subsided as graduates appear to have consolidated their advantaged position in the labour market, but shifts in the enrolments to the different subjects of university courses continue, causing a change in the overall panorama of higher education in Italy, and aligning it more closely to that of other European countries.

While the traditional labour market for graduates still exists, there is an emerging, and differently structured, labour market for higher education leavers which may strongly influence content, structure and provision of programmes by public and private agencies, which are more in keeping with the emerging professions of the 1990s.

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I. CHANGES IN THE "OUTPUT" OF HIGHER EDUCATION

This section of the report is concerned with the qualitative changes occurring in higher education in Italy and is based on official data (*Annuari ISTAT di statistiche sull'istruzione*), which only take account of traditional higher education programmes and institutions, public and private. However, an effort will be made to assess the amount and nature of new non-traditional higher education programmes, which are showing consistent growth along significant paths of development.

In absolute terms, the number of higher education leavers rose from 113,637 (1982) to 125,780 (1986), while the proportion of higher education leavers to total leavers increased only slightly, from 12% in 1982 to 13.1% in 1986. The slight increase is explained by the percentage weighting of senior secondary school output, from 31.2% to 38.6%, following the Italian "baby-boom" of the sixties. However, the proportion of higher education leavers to total leavers is likely to increase as this demographic trend makes its way through higher levels of education.

Nevertheless, the most important change occurring in higher education in Italy is the tendency towards diversification and the consequent increase in opportunities.

These new opportunities are supplied both by public and private institutions and generally take the form of short-term courses in areas of study closely linked to employment opportunities. Graduates on these courses. as a percentage of total higher education leavers, increased from 27.8% (1982) to 29.7% (1987), while the proportion of graduates from traditional university courses (Level 6) fell from 61.8% to 58.9% in the same period.

This is evidence of the "appeal crisis" of traditional university courses, due in part to graduates' difficulties in entry to the labour market during the seventies and the first half of the eighties. A university preparation which is not oriented towards the needs of the labour market, espeically for new professional skills in the service sector, as well as the structural dynamics of the labour market itself, are the main causes of these difficulties.

The Italian education system still shows a low "productivity": it has been calculated that only 37% of enrolled students complete their final degree (Source: Censis, *XX Rapporto sulla situazione sociale del Paese*, Roma, 1986). "Low productivity" is one of the consequences of a policy of free access, coupled with high dropout rates, although the reduction in 1st year dropout rates and fewer students in paid employment during their university studies may indicate a trend towards "higher productivity" in the Italian higher education sector.

Analysing the situation by subject groups, the main shifts are away from the classical university disciplines such as medicine, engineering and literature, which always provided the largest base for recruitment in the public sector, to an increase in typical tertiary fields of study both at Level 5 and 6.

Women's participation in higher education has significantly increased both as proportion of total graduates and as absolute enrolments, but their distribution by subject group has not significantly changed. Since the two main preferred fields of study for women, scientific disciplines and literature, are declining, it may be the case that this will produce changes in the pattern of women's participation in higher education. Demographic trends, better economic conditions, and an educational supply more closely aligned to the new needs of the labour market (short-term courses, "tertiary" fields of study, etc.), will ensure that higher education in Italy is destined to be a growth area. Thus, recent trends and dynamics of the labour market have and will profoundly influence the higher education system, both in its institutional structure (i.e. the supply side) and young people's attitudes to it (i.e. the demand side).

1. **Proportion of leavers from the different higher education programmes** to **total leavers**

To evaluate this proportion, it is necessary to consider the annual total output of Italian educational system in terms of outflows from the different levels of qualification (see Table I/1).

In 1986 939,000 people left the educational system:

- 87,000 (9.3%) did not complete compulsory education,

- 367,000 (39,1%) left the system with a junior secondary school degree (this figure includes those 220,000 who enrolled at senior secondary school but then abandoned it).

- 362,000 (38.6%) left the system with a senior secondary school degree,

- 123,000 (13.1%) graduated from the different programmes and institutions of higher education.

These figures show that numbers participating in higher education as a whole is far from being high, though there have been significant, but slight, increases in the period 1982-1986 (most recently available data): the proportion of higher education leavers to total leavers was 12% in 1982, 11% in 1983, 12.3% in 1984, 12.2% in 1985 and 13.1% in 1986.

The increases in ouflow from higher education are mainly due to the growing output from short- term courses (Level 5 ISCED classification), rather than graduates from traditional university courses.

Table I/1

Leavers from the Educational System

	1981/82	1982/83	1983/84	1984/85	1985/86
(Absolute Values in Thousands)					
Dropouts from Junior Secondary School	130	120	106	94	87
Junior Secondary School Degree (*)	410	420	385	372	367
Senior Secondary School Degree (**)	297	343	350	368	362
Higher Education	114	109	118	116	123
TOTAL	951	992	959	950	939
(Percentage Composition)					
Dropouts from Junior Secondary School	13.7	12.1	11.1	9.9	9.3
Junior Secondary School Degree (*)	43.1	42.3	40.1	39.2	39.1
Senior Secondary School Degree (**)	31.2	34.6	36.5	38.7	38.6
Higher Education	12.0	11.0	12.3	12.2	13.1
TOTAL	100.0	100.0	100.0	100.0	100.0

(*) Including dropouts from senior secondary school.
(**) Including dropouts from university.

Source: Original and Censis processing from Istat data.

Data shown in table i/1 reveal:

- a decrease in percentage of dropouts from compulsory education (13.7% in 1982 and 9.3% in 1986 of total leavers),
- fewer leaving the system with junior secondary school degrees (43.1% in 1982, 39.1% in 1986),
- more leaving the system with senior secondary school degree (from 31.2% to 38.6%).

These trends are connected with demographic aspects, since the effect of the italian "baby boom" of the sixties is now being felt at upper secondary school level. By contrast, the low birth rate of the seventies is decreasing the pressure on compulsory education (primary and junior secondary school), resulting in a reduction of its dropout rate, though social and cultural factors may also play a significant role here.

The functioning of the italian education system can be shown by means of a table of fluxes (figure i/1).

Taking as a base, 100 young people in the first class of junior secondary school, the destinations of this initial contingent are:

- 5 out of 100 youngsters do not complete compulsory education;
- 54 out of 100 leave the system because they completed a cycle of study, while 46 drop out;
- 10 out of 100 reach the end of the road, i.e. a university degree.

University retains its role of preparing a small proportion of the population for executive and professional posts. Even free access to university has not changed this role, because other selection factors continue to operate.

2. Structure of net outflows from higher education

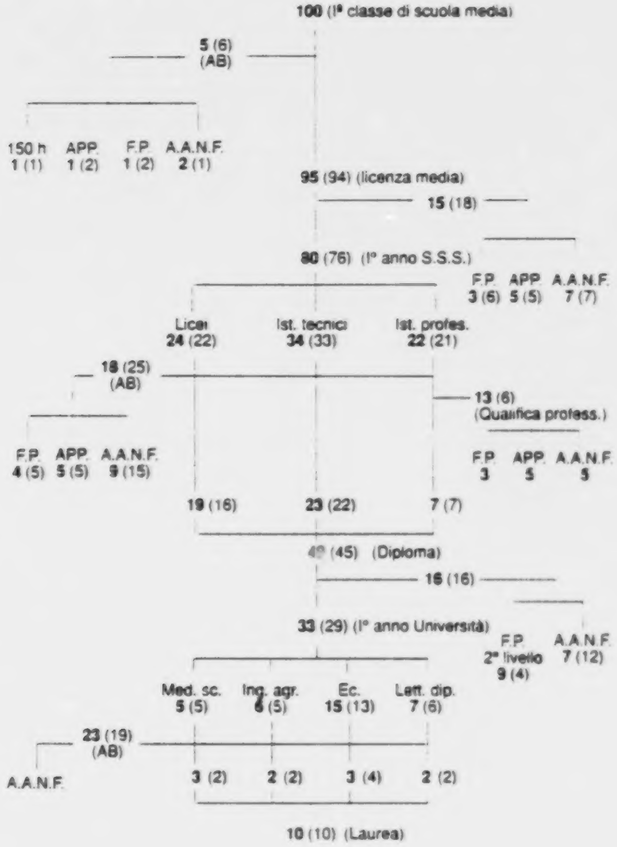
"University courses" are synonymous in most people's minds with the traditional disciplines, the 4 year law or literature course, or the 6-7 year courses in engineering and medicine. However, higher education encompasses a broader range of courses, most of them not longer than two or three years, not equivalent to a first university degree.

Outflows from non traditional courses

These courses are of two main types:

- traditional short-term courses, which include special purpose school and university diplomas, run by university institutions. special purpose school courses prepare qualified personnel for professions such as physiotherapist, nurse, etc., archivists or librarians. university diplomas focus on specific areas, such as computer science, fine arts, etc.

Figure I/1
Flows in the Italian educational system *


100 (I° classe di scuola media)
5 (6) (AB)
150 h 1 (1)
APP. 1 (2)
F.P. 1 (2)
A.A.N.F. 2 (1)
95 (94) (licenza media)
15 (18)
F.P. 3 (6)
APP. 5 (5)
A.A.N.F. 7 (7)
80 (76) (I° anno S.S.S.)
Licei 24 (22)
Ist. tecnici 34 (33)
Ist. profes. 22 (21)
18 (25) (AB)
F.P. 4 (5)
APP. 5 (5)
A.A.N.F. 9 (15)
13 (6) (Qualifica profess.)
F.P. 3
APP. 5
A.A.N.F. 5
19 (16)
23 (22)
7 (7)
49 (45) (Diploma)
16 (16)
F.P. 2° livello 9 (4)
A.A.N.F. 7 (12)
33 (29) (I° anno Università)
Med. sc. 5 (5)
Ing. agr. 6 (5)
Ec. 15 (13)
Lett. dip. 7 (6)
23 (19) (AB)
A.A.N.F.
3 (2)
2 (2)
3 (4)
2 (2)
10 (10) (Laurea)

Notes

AB	dropouts
APP	apprenticeship
FP	(regional) vocational training
AANF	activities other than training

* fictitious cohort, 1988-89 data

- non-traditional courses, which include:

  a) 2nd level vocational training provided by regional authorities;

  b) post-degree courses conducted by secondary schools in order to provide diploma-holders with a preparation more in keeping with the new needs expressed by civil and economic society;

  c) training opportunities supplied by private entreprise, which cover various fields, from restoration to marketing, from design to EDP.

Table I/2 shows outflows from traditional and non-traditional courses in higher education by level.

The outflows at Level 5 (ISCED classification) have increased between 1982 and 1987: from 31,587 to 37,362 graduates, which represents a rise from 27.8% to 29.7% of the total higher education output.

Looking at all types of level 5 courses, it can be seen that outflows from those run by traditional institutions are decreasing: university diploma-holders dropped from 4,223 to 3,784, special purpose school from 2,081 to 2,045 and 2nd level vocational training from 19,144 to 15,451; while the output from new types of courses is increasing: the post-degree courses conducted by secondary schools have grown from 112 to 2,540 and private courses from 6,017 to 13,452.

The courses provided by secondary technical schools are designed to provide better preparation for entry to the labour market than was previously the case. The schools work together with local firms and entreprises, which often help by financing or by providing technicians as teachers, to provide a more vocationally relevant curriculum.

Such courses are very "attractive" to youngsters. Firstly they do not have to change school or city, and, more importantly, they are almost 100% certain of a job on completion of the course, since courses are designed according to local firms' labour needs.

Courses run by private institutions, are also in subject areas closely linked to the labour market and, in many cases, informal contacts exist between firms and private schools, guaranteeing labour for the firm and employment for the youngster.

Outflows from traditional universities

These types of course (Level 6 in Table I/2) show a numerical increase from 70,244 to 74,085 graduates, but a slight decrease in percentage of total higher education output - from 61.8% to 58.9%.

Post-graduate courses (Level 7 in Table I/2) are, on the other hand, increasing both in absolute (11,806 to 14,333) and in relative terms (10.4% to 11.4%).

Table I/2

Higher Education Outflows by Level

	1982	1983	1984	1985	1986	1987
(Absolutes Values)						
Level 5	31 587	28 583	32 498	32 262	36 466	37 362
- University Diploma	4 233	4 110	3 790	3 533	2 840	3 784
- Special Purpose Schools	2 081	1 968	1 920	1 805	1 853	2 045
- Private Schools (*)	6 017	7 301	8 860	10 419	12 252	13 542
- Vocational Training II Level (*)	19 144	14 914	17 449	15 539	17 931	15 451
- Post-Diploma (*)	112	290	479	966	1 590	2 540
Level 6	70 244	69 986	69 404	68 855	72 970	74 085
Level 7	11 806	10 871	16 213	14 456	13 981	14 333
TOTAL	113 637	109 440	118 115	115 663	123 417	125 780
(Percentage Composition)						
Level 5	27.8	26.2	27.5	27.9	29.6	29.7
Level 6	61.8	63.9	58.8	59.5	59.1	58.9
Level 7	10.4	9.9	13.7	12.6	11.3	11.4
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0

(*) Estimates.

Source: Original and Censis processing of Istat data.

Little can be concluded in relation to dropout rates (see Table I/3) from analysis of trends between 1981 and 1987, though the "peak" rate of 1987 (17.6%) shows that this phenomenon is still present in Italian universities. However, the decrease in 1st year dropout rates since 1982, from 32% to 24.5%, could signify better initial choice of university course, as well as a wider range of higher education opportunities on offer.

A more accurate analysis of dropout rates can be conducted by examining 1st year rates by subject groups in 1986 (last available data; see Table I/4): the highest rate is found in social and political disciplines (37.5%), followed by literature (31.4%) and economic disciplines (30.1%). Other subjects groups show dropout rates around the average, with the exception of medical disciplines, which at 16.2%, represent the lowest dropout rates.

Investigating students who change their field of study, a recent survey conducted by ISTAT (*Istituto Centrale di Statistica*) on 1986 graduates, shows the following (see Table I/5): 20.6% of graduates in social and political disciplines had enrolled in another field of study, as did 14.5% of graduates in literature, 11.8% in agriculture and 11% in scientific disciplines. 9.6% of all graduates obtained their degree in a discipline different to the one they enrolled in.

It appears that changing discipline and 1st year dropout rates are greater in those subject areas which are generalist and which do not have a specific vocational content.

Concerning students who combine work and study (see Table I/6), available data shows a consistent decline from 50.6% for 1977 graduates to 41.3% for 1981 graduates and 32.4% for 1986 graduates.

Again, analysis by area studied shows a distinction by subject groups, with the highest percentage of students combining work and study in social and political sciences and literature disciplines, where attendance requirements are more lax, and with the lowest rates in medical disciplines.

It might be concluded from this evidence that young people are taking university more seriously and that it may be losing its a "parking lot" for young people in transition.

Table I/3

University Dropouts (Level 6)

	Total Dropouts	Percentage (*)	Dropouts During First Year	Percentage (*)
1980-81	159.803	15.4	69. 992	28.9
1981-82	172.764	16.5	78.095	32.0
1982-83	156.866	15.3	63.367	28.0
1983-84	149.804	14.7	62.080	27.1
1984-85	129.655	12.3	69.258	27.0
1985-86	163.553	14.8	70.718	27.9
1986-87	196.054	17.6	59.538	24.5

(*) Ratio (x100) of dropouts to students enrolled in the year before.

Source: ISTAT.

Table I/4

First-Year Dropout Rates by Subject Group in 1986

Group	Percentage
Scientific	27.0
Medical	16.2
Engineering	24.1
Agriculture	27.4
Economics	30.1
Social and Political Science	37.5
Law	26.7
Literature	31.4
Total	27.9

Source: Original Processing of Istat Data.

Table I/5

Graduates in 1986 who changed course by subject group

	Percentage
Scientific	11.0
Medical	3.9
Engineering	9.8
Agriculture	11.8
Economics	6.7
Social and Political Science	20.6
Law	5.4
Literature	4.5
TOTAL	9.6

Source: Indagine sugli sbocchi professionali dei laureati, ISTAT 1989.

Table I/6

Percentage of graduates who worked while studying by subject group

	Graduates 1977	Graduates 1981	Graduates 1986
Scientific	-	28.9	18.6
Medical	-	24.2	11.6
Engineering	-	49.4	35.0
Agriculture	-	41.6	27.1
Economics	-	49.7	31.3
Social/Political Science	-	69.0	58.5
Law	-	39.9	31.3
Literature	-	52.5	49.4
TOTAL	50.6	41.3	32.4

Source: (a) Ricerca sull'inserimento professionale dei Laureati, Ministero della Publica Istruzione 1982.

(b) Indagine sugli sbocchi professionali dei Laureati, ISTAT 1984, 1989.

3. Structure of outflows by subject group

The most relevant shift in higher education net outflows concerns the increase in new types of courses, especially those supplied by non-traditional institutions. Data on outflows by subjects is sparse, although it does exist for distribution by subject group of traditional university output, at Levels 6 and 7 and part of Level 5 (ISCED classification). In addition, data concerning new enrolments can be used to indicated outflow trends from different subject groups.

Outflows at Level 5 show that:

- 90% of those attaining a university diploma in 1987 were attending a paramedical course (Source: Istat);
- among those who graduated from a special purpose school in 1987, 76.4% had taken a paramedical course, 12.8% a technical course, 7.4% a social work course and the remaining 3.4%, another type of vocational qualification (Source: *La scuola dei paradossi. Relazione CENSIS sui processi formativi*, Milano, F. Angeli, 1989);
- within post-secondary vocational training outflows in 1987, the distribution by subject groups was the following (Source: op.cit.).

Computer Science	37.1 %
Office Automation	20.2 %
Industry	19.4 %
Tourism	4.0 %
Show Business	3.7 %
Social and Environmental	6.7 %
Trade	4.0 %
Others	5.0 %

- the outflows from post-diploma courses issued by secondary schools in 1987 were as follows: (Source: op.cit.)

Services	26.7 %
Industry	21.5 %
Trade	16.8 %
Banking and Financial	11.5 %
Agric. and Environmental	7.8 %
Others	15.7 %

Unfortunately, lack of data prevents the evaluation of distribution by subject groups of outflows from post-secondary courses run by private schools.

Table I/7 shows the structure of the outflows from university (Level 6) by subject groups. The classification of ISTAT has been used because it more suitably describes the shifts in subject groups, especially in relation to the labour market.

Table I/7

Graduates by subject group (1)

	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Scientific	11 695	10 783	11 082	10 977	11 183	10 762	9 945	10 112	10 391	10 933
Medical	14 792	14 264	15 323	15 171	14 753	14 369	13 489	13 518	12 603	12 198
Engineering (*)	11 389	11 509	10 757	10 874	10 343	10 328	9 845	10 295	9 845	10 469
Agriculture	1 738	1 881	2 181	2 621	2 843	2 840	3 034	3 016	2 842	2 765
Economics	3 481	3 862	3 976	4 536	5 373	6 122	6 834	8 141	8 967	9 812
Social and Political Science	3 731	3 548	3 361	3 146	3 216	2 948	2 950	3 450	3 651	3 715
Law	7 233	7 718	7 722	7 542	8 576	8 232	8 603	9 353	9 959	10 988
Literature	18 105	16 687	15 589	15 377	13 699	13 803	14 155	15 085	15 827	16 098
TOTAL	72 164	70 252	69 991	70 244	69 986	69 404	68 855	72 970	74 085	76 978
Percentage Composition										
Scientific	16.2	15.3	15.8	15.6	16.0	15.5	14.4	13.9	14.0	14.2
Medical	20.5	20.3	21.9	21.6	21.1	20.7	14.6	18.5	17.0	15.8
Engineering (*)	15.8	16.4	15.4	15.5	14.8	14.9	14.3	14.1	13.3	13.6
Agriculture	2.4	2.7	3.1	3.7	4.1	4.1	4.4	4.1	3.8	3.6
Economics	4.8	5.5	5.7	6.5	7.6	8.8	9.9	11.2	12.2	12.7
Social and Political Science	5.2	5.1	4.8	4.5	4.6	4.2	4.3	4.7	4.9	4.8
Law	10.0	11.0	11.0	10.7	12.2	11.9	12.5	12.8	13.4	14.3
Literature	25.1	23.7	22.3	21.9	19.6	19.9	20.6	20.7	21.4	20.9
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(1) Level 6 of Isced Classification
(*) Including Architecture

Source: Original processing of Istat data.

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Thus, the outflows are divided in 7 subject groups and their percentage of total output has been calculated for the ten year period 1979-1988. Some subject groups show a substantial decrease in "weight" over this period of time:

- medical disciplines, which represented 20.5% of graduates in 1979 and 14.2% in 1988,
- literature disciplines, which, though still the largest group of graduates, fell from 25.1% in 1979 to 20.9% in 1988.

This decline is related to the difficulties facing these graduates on the labour market. Medical graduates face an oversupply of doctors, resulting from the increased access to higher education and the high status of the medical profession in Italy. Graduates in literature disciplines also face poor labour market prospects, since recruitment to the public sector has declined in the last ten years.

Other subject groups show a slight decrease in graduate outflows:

- scientific disciplines, from 16.2% to 14.2%,
- engineering disciplines (including architecture), from 15.8% to 13.6%,
- social and political disciplines, from 5.2% to 4.8%.

However, the decrease in numbers of graduates from these fields of study is very small; the percentage decrease is accounted for by the increase in total figures.

It is reasonable to argue that graduates in scientific and, particularly, engineering disciplines have good employment prospects, but the same cannot be said for graduates in social and political disciplines.

Agricultural disciplines (including veterinary medicine), show an increase in percentage of graduates from 2.4% to 3.6%. Increasing interest in enviromental issues is likely to create a greater demand from the labour market than can be met by graduates from these disciplines.

The subject groups which show sharp increases in outflow are:

- economic disciplines, which almost treble both in absolute figures (from 3481 to 9812 graduates) and in percentage terms (from 4.8% to 12.7%).
- law, where the percentage of graduates rose from 10% in 1979 to 14.3% in 1988.

Concerning the distribution of outflows at Level 7 (ISCED classification), 90% of post-graduates attended a specialised course in medicine.

Table I/8

New Enrollements by Subject Group (1)

	81-82	82-83	83-84	84-85	85-86	86-87	87-88	88-89
Scientific	30 004	29 358	32 280	31 198	28 700	28 847	30 328	33 009
Medical	19 799	18 886	18 660	15 728	13 086	11 773	10 201	8 462
Engineering (*)	29 931	31 650	34 948	34 624	34 362	35 369	38 102	46 731
Agriculture	8 025	7 109	7 778	7 219	6 617	5 705	5 719	5 795
Economics	35 170	36 097	40 965	42 307	41 449	43 263	49 843	49 552
Social and Political Science	13 383	14 650	17 519	19 064	17 949	21 657	25 412	28 124
Law	36 552	37 168	44 267	42 836	42 195	40 986	43122	46 335
Literature	47 815	48 116	53 850	54 360	50 416	48 875	50 279	54 263
TOTAL	220 679	223 034	250 267	247 336	234 774	236 475	253 006	272 241
Percentage Composition								
Scientific	13.6	13.2	12.8	12.6	12.2	12.2	12.0	12.1
Medical	9.0	8.5	7.5	6.4	5.6	5.0	4.0	3.1
Engineering (*)	13.6	14.2	14.0	14.0	14.6	15.0	15.1	17.2
Agriculture	3.6	3.2	3.1	2.9	2.8	2.4	2.3	2.1
Economics	15.9	16.2	16.4	17.1	17.7	18.3	19.7	18.3
Social and Political Science	6.1	6.6	7.0	7.7	7.7	9.2	10.0	10.3
Law	16.6	16.7	17.7	17.3	18.0	17.3	17.0	17.0
Literature	21.7	21.6	21.5	22.0	21.5	20.7	19.9	19.9
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(1) Level 6 of Isced Classification
(*) Including Architecture

Source: Original processing of Istat data.

The distribution of new enrolments to university (see Table I/8) confirms some of the above mentioned trends relating to outflow, but inverts others:

- enrolments in scientific, medical, law and literature disciplines show more or less the same tendency as graduate ouput, though a small percentage drop in enrolments in law disciplines has been noted since 1986;
- enrolments in agriculture, economic, engineering and social and political disciplines, however, differ from graduate output.

New enrolments in agriculture and economic disciplines, which, until 1988 showed a growing output, have decreased, while enrolments have increased in engineering and social and political disciplines, where, up to 1988, graduate output had slowed down.

By way of conclusion, the following tendencies can be noted:

- the main bulk of the outflows at Level 5 appears to be located in those areas linked to the new needs of the labour market.
- in traditional university output (Level 6), there is a move towards the growth of typical tertiary fields of studies and the decline of traditional university courses in medicine, humanities or scientific disciplines.
- post-graduate courses (Level 7) are, to date, almost exclusively concerned with specialisation of medical graduates.

4. Women's participation in higher education

Available data on the participation of women in higher education show only their distribution across and their proportion of subject groups, both for new enrolments and graduates.

The total amount of women graduating between 1981 and 1988 increased from 30,751 to 36,471 (*see Table I/9*). The shifts from one subject group to another reflect changes in total output, though some differences are noteworthy.

The decrease, for instance, in the percentage of women who graduated in scientific disciplines out of all female graduates, is sharper than for the population as a whole, while such a greater than average decrease is not recorded for the medical disciplines.

Further, the proportion of women who graduated in social and political disciplines has not declined, as it has for graduates as a whole.

Interesting and significant data are shown in Table I/10, giving the proportion of women out of total graduates and by subject groups.

Table I/9

Female Graduates by Subject Group (1)

	1981	1982	1983	1984	1985	1986	1987	1988
Scientific	6 855	6 899	6 760	6 660	5 916	5 926	6 182	6 194
Medical	4 376	4 577	4 937	4 831	4 625	4 617	4 595	4 679
Engineering	1 543	1 507	1 531	1 612	1 643	1 871	1 865	1 765
Agriculture	406	571	602	683	774	741	716	713
Economics	1 038	1 305	1 583	1 819	2 103	2 619	3 006	3 270
Social and Political Science	1 325	1 212	1 256	1 211	1 191	1 472	1 583	1 700
Law	2 877	2 931	3 132	3 437	3 824	4 235	4 505	5 032
Literature	12 331	12 129	10 753	10 822	11 251	11 906	12 822	13 118
TOTAL	30 751	31 131	30 554	31 075	31 327	33 387	35 274	36 471
Percentage Composition								
Scientific	22.3	22.2	22.1	21.4	18.9	17.8	17.5	17.0
Medical	14.2	14.7	16.2	15.5	14.8	13.8	13.0	12.8
Engineering	5.0	4.8	5.0	5.2	5.2	5.6	5.3	4.8
Agriculture	1.3	1.8	2.0	2.2	2.5	2.2	2.0	2.0
Economics	3.4	4.2	5.2	5.9	6.7	7.8	8.5	9.0
Social and Political Science	4.3	3.9	4.1	3.9	3.8	4.4	4.6	4.6
Law	9.4	9.4	10.2	11.1	12.2	12.7	12.8	13.8
Literature	40.1	39.0	35.2	34.8	35.9	35.7	36.3	36.0
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(1) Level 6 of Isced Classification

Source: Original processing of Istat data.

Table I/10

Percentage of Females on Total Graduates by Subject Group (1)

	1981	1982	1983	1984	1985	1986	1987	1988
Scientific	51.9	52.8	50.4	61.8	59.5	58.6	59.5	55.7
Medical	28.6	30.2	33.5	33.6	34.3	34.2	36.5	38.4
Engineering	14.3	13.6	14.8	15.6	16.7	18.2	18.9	16.9
Agriculture	18.6	21.8	21.2	24.0	25.5	24.6	25.2	25.8
Economics	26.1	28.8	29.5	29.7	30.8	32.2	33.5	33.4
Social and Political Science	39.4	38.5	39.1	41.1	40.4	42.7	43.4	45.8
Law	37.3	38.9	36.5	41.8	44.4	45.3	45.2	45.8
Literature	79.1	78.9	78.5	78.4	79.5	79.8	81.0	81.5
TOTAL	43.9	44.3	43.6	44.8	45.5	45.8	47.6	47.4

(1) Level 6 of Isced Classification

Source: Original processing of Istat data.

From a general point of view, the percentage of total outflows increased from 43.9% to 47.4% between 1981 and 1988. Women's presence in university output has also increased in every subject group, especially in some traditionally male preserves, for example, the medical disciplines, in which the percentage of female graduates rose from 28.6% to 38.4%, and agricultural disciplines, where women represented 18.6% of graduates in 1981 and 25.8% in 1988.

Smaller, however, is the growth of women's participation in disciplines such as engineering (from 14.3% to 16.9%) and literature (from 79.1% to 81.5%).

Literature and scientific disciplines are so far the only subject areas in which the percentage of female graduates exceeds that of males; these subjects are those which are considered preparatory for professions in public education.

The distribution of female new enrolments by subject groups between 1982 and 1986 (see Table. I/11) shows some significant changes in women's participation in university. For example, the percentage decline in enrolments in literature disciplines, from 36.6% to 36.1%, indicates that women tend to consider this field of study less professionally attractive.

The percentage of women who enroll on economic and law courses is higher than the percentage of women (out of total women) graduating in these disciplines in the same year. In economic disciplines, women as a percentage of total graduates was 7.8% in 1986, while in the same year the percentage of new enrolments was 14.1%; in law disciplines, the percentage on total graduates was 12.7%, but in the same year the percentage on new enrollments was 17.7%.

This means that women tend to react to changing employment prospects in the same way as men do and that the distribution of women across the disciplines may be changing in character.

Lastly, the percentage of women enrolling, increasing from 45.2% to 47.8% between 1982 and 1986 (see Table I/12) is greater than the percentage of females graduating in the same years, suggesting that a stronger factor of selection operates for women during their university careers.

Analysis reveals that the percentage of women out of total new enrolments has significantly increased from 1982 to 1986 in subject groups such as medicicine (from 39.7% to 44.9%) and social and political disciplines (from 38.9% to 43.9%), but less significantly in other subject areas.

This data would suggest that, firstly, the participation of women in higher education is constantly increasing and is reaching the 50% level, both for enrolments and for graduates and, secondly, the present distribution of women by subject groups is just as much a reflection of employment prospects as it is for men.

Table I/11

Females New Enrollements by Subject Group (1)

	81/82	82/83	83/84	84/85	85/86
Scientific	14 417	13 790	14 839	14 628	13 985
Medical	7 867	7 913	4 099	6 895	5 924
Engineering	4 899	5 458	6 093	6 461	6 601
Agriculture	1 873	1 580	1 936	2 044	1 789
Economics	12 229	12 939	15 301	15 815	15 952
Social and Political Science	5 201	5 965	7 336	8 415	8 201
Law	16 645	17 155	21 056	20 458	20 134
Literature	36 507	40 358	42 601	42 559	40 863
	Percentage Composition				
Scientific	14.5	13.1	12.7	12.5	12.3
Medical	7.9	7.5	7.0	5.9	5.2
Engineering	4.9	5.2	5.2	5.5	5.8
Agriculture	1.9	1.5	1.7	1.7	1.6
Economics	12.3	12.3	12.9	13.5	14.1
Social and Political Science	5.2	5.7	6.3	7.2	7.2
Law	16.7	16.3	17.9	17.4	17.7
Literature	36.6	38.4	36.3	36.3	36.1
TOTAL	100.0	100.0	100.0	100.0	100.0

(1) Level 6 of Isced Classification

Source: Original processing of Istat data.

Table I/12

Percentage of Females on Total New Enrollements by Subject Group (1)

	81/82	82/83	83/84	84/85	85/86
Scientific	48.1	47.0	46.0	46.9	47.8
Medical	39.7	41.8	43.4	43.8	44.9
Engineering	16.4	17.2	17.4	18.7	19.2
Agriculture	23.3	22.2	24.9	28.3	27.5
Economics	34.8	35.8	37.4	37.4	37.7
Social and Political Science	38.9	40.7	41.9	44.1	43.9
Law	45.5	46.2	47.6	47.8	48.1
Literature	76.4	83.9	79.1	78.3	80.2
TOTAL	45.2	47.1	46.9	47.4	47.8

(1) Level 6 of Isced Classification

Source: Original processing of Istat data.

II. CHANGING EMPLOYMENT PROSPECTS

This section of the report will examine graduates' employment prospects through analysis of data on **employment destinations** and **transition conditions**.

The data used is based on official labour market statistics (*Rilevazione ISTAT sulle forze di lavoro*) as well as from more qualitative surveys conducted by different institutions on professional destinations of graduates. Unfortunately, both sources only consider traditional university graduates (i.e. Level 6 of ISCED classification), making it impossible to assess the impact on labour market of outflows from non-traditional courses. However, some references will be made to this topic, if only from an anecdotal point of view.

1. Employment Destinations

As a proportion of jobholders, graduates are increasing slightly (see Table II/1) from 6% in 1984 to 7% in 1988. The percentages for women show a greater inrease, from 6.6% in 1984 to 7.9% in 1988. Clearly, the proportion of graduates in the Italian occupational structure is growing.

This analysis proves more consistent and interesting if examined by age. In the 25-29 age group, the proportion of graduates to jobholders decreased from 5.9% in 1984 to 4.9% in 1987, but rose again to 5.1% in 1988. Comparing this age group with the 30-39 year olds, in which the proportion of graduates constantly increased (from 9.4% in 1984 to 10.8% in 1988), it can be seen that length of university studies plays a role and that the difficulties of "first entry" in the world of work for graduate increased in recent years.Analysing by age for women shows a similar pattern: in the class of age 25-29 the proportion of graduates fell from 7.4 to 6.2 between 1984 and 1987, inceasing to 6.7% in 1988, while in the age group 30-39, it is increasing every year, reaching 13.4% in 1988. Note that the figures concerning women are higher than those for the population as a whole.

Moreover, the proportion of women to graduate jobholders has increased in the last five years (see Table II/2): from 35.7% in 1984 to 38.1% in 1988.

Graduates' employment destinations can also be analysed by sector of employment. This kind of analysis can be conducted in two ways: by assessing the "weight" of graduates to total jobholders by sector, and by showing the distribution of graduates by sector, including specific data on women.

The proportion of graduates to total occupation by sector (see Table II/3) does not show significant changes in the last five years (1984-1989): in agriculture it remained at 0.7%, in industry it increased slightly from 1.5% to 1.9%, as it did in the service sector, from 10% to 10.8%.

Table II/1

Percentage of Graduates on Jobholders by Age and Sex

		1984	1985	1986	1987	1988
M+F	25 to 29 aged	5.9	5.6	5.3	4.9	5.1
	30 to 39 aged	9.4	9.7	9.9	10.5	10.8
	Total	6.0	6.3	6.5	6.7	7.0
F	25 to 29 aged	7.4	7.0	6.6	6.2	6.7
	30 to 39 aged	11.5	11.8	12.1	12.6	13.4
	Total	6.6	6.9	7.1	7.3	7.9

Source: *Rilevazione sulle forze di lavoro*, ISTAT.

Table II/2

Percentage of Women on Graduate Jobholders

1984	1985	1986	1987	1988
35.7	35.6	36.3	37.0	38.1

Source: see above.

The same data for women does not show great differences in the trend, though percentage figures are slightly lower for industry (1% in 1989) and higher for the service sector (11.4% in 1988).

The distribution of graduates by sector (see Table II/4) shows the elevated proportion of graduates working in the service sector: around 90%, without any significant shifts during the last five years. The remaining 10% is made up of 9% of graduates occupied in industry and 1% in the primary sector.

The distribution of female graduates reveals a higher percentage employed in services (around 96%) and lower values in industry (around 3%) and agriculture (less than 1%).

Table II/3

Percentage of Graduates on Jobholders by Sector

		1984	1985	1986	1987	1988
M+F	Agriculture	0.7	0.7	0.7	0.7	0.7
	Industry	1.5	1.6	1.7	1.9	1.9
	Services	10.0	10.2	10.3	10.4	10.8
	Total	6.0	6.3	6.5	6.7	7.0
F	Agriculture	0.5	0.4	0.4	0.4	0.4
	Industry	0.7	0.7	0.9	0.9	1.0
	Services	10.2	10.4	10.5	10.7	11.4
	Total	6.0	6.3	6.5	6.7	7.0

Source: Rilevazione sulle forze di lavoro, Istat.

Table II/4

Percentage of Graduates by Sector

		1984	1985	1986	1987	1988
M+F	Agriculture	1.2	1.1	1.2	1.1	1.0
	Industry	8.3	8.7	8.9	9.1	9.0
	Services	90.5	90.2	89.9	89.8	90.0
	Total	100.0	100.0	100.0	100.0	100.0
F	Agriculture	0.9	0.6	0.6	0.6	0.4
	Industry	2.5	2.6	3.1	2.9	3.0
	Services	96.6	96.8	96.3	96.5	96.6
	Total	100.0	100.0	100.0	100.0	100.0

Source: Rilevazione sulle forze di lavoro, ISTAT.

Qualitative surveys of graduates' professional destinations five years after leaving university also provide useful insights.

Table II/5 shows data from two different surveys: one undertaken in 1982 dealing with the professional destinations of a national sample of graduates from 1977; the second carried out in 1986, examining the professional destinations of a sample of graduates from Rome university in 1981:

- over 30% of graduates are working in public services (for women graduates of 1981 it is 40.9%);
- over 30% of graduates are employed in private services (for women graduates of 1981, only 23.3%);
- the percentage of graduates in industry fluctuates around 10% (but only 4.5% of women graduates of 1981).

Considering that most of the other sectors are related to services, these data demonstrates a high level of "tertiarisation" of work for graduates and a large proportion of women in the public sector.

Table II/5

Employment Sectors in 1982 and 1986 of those who graduated in 1977 and 1981 (Percentage value)

	Graduates 1977 (a)	Graduates 1981 (b)		
	M+F	M	F	M+F
Agriculture	0.9	0.7	0.3	0.5
Industry	11.8	13.2	4.5	9.4
Public Services	33.3	24.3	40.9	31.7
Building Industry	3.8	1.8	0.3	1.1
Trade	4.7	2.8	4.5	3.5
Transports and Communications	0.9	2.3	2.1	2.2
Services	32.3	35.7	23.3	30.1
Credit and insurances	5.0	5.7	2.8	4.4
Others	1.8	9.5	14.0	11.4
Not Employed	5.5	4.0	7.3	5.7
Total	100.0	100.0	100.0	100.0

Sources: a. Ricerca sull'inserimento professionale dei laureati, Ministero della Pubblica Istruzione, 1982.
b. Ricerca sugli sbocchi professionali dei laureati dell' Universita'di Roma "La Sapienza", 1986.

Another important aspect of employment destinations of graduates concerns the positions they reach in their professions. The same two qualitative surveys can also used, together with a more recent survey of those who graduated in 1986, carried out three years after graduation (see Table II/6) :

- 50.5% of those who graduated in 1977, 35.2% of those in 1981 and 22.8% of 1986 graduates occupied employee status;
- 20.8% of 1977 graduates (37.3% of women), 15.8% in 1981 (26.7% of women) and 15.2% of 1986 graduates (24.4% of women) reached teacher status;
- 18.3% of 1977 graduates (22.3% of men), 28% of 1981 graduates (34.1% of men) and 25.4% of 1986 graduates (31.3% of men) reached independent professional level;
- 1.4% of 1977 graduates, 4.3% of 1981 graduates and 10% of 1986 graduates were at foreman and executive level.

Table II/6

Professional Position of Graduates (Percentage Value)

	Graduates in 1977 5 Years after Grad. (A)			Graduates in 1981 5 Years after Grad. (B)			Graduates in 1986 3 Years after Grad. (C)		
Position	M	F	M+F	M	F	M+F	M	F	M+F
Employee	57.5	38.4	50.5	38.8	30.8	35.2	25.3	19.8	22.8
Teacher	11.3	37.3	20.8	7.0	26.7	15.8	7.4	24.4	15.2
Independent profession	22.3	11.3	18.3	34.1	20.5	28.0	31.3	18.4	25.4
Foreman, Executive	1.6	1.0	1.4	5.5	2.8	4.3	12.7	6.7	10.0
Others	4.4	1.7	3.4	10.6	11.9	11.0	5.5	4.2	4.9
Unemployed	2.9	10.3	5.6	4.0	7.3	5.7	17.8	26.5	21.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Sources: (a) Ricerca sull'inserimento professionale dei laureati, Ministero della Pubblica Istruzione, 1982
(b) Ricerca sugli sbocchi professionali dei laureati dell'Università di Roma "La Sapienza", 1986
(c) Indagine Istat sugli sbocchi professionali dei laureati, 1989.

While it is not possible to make direct comparisons between the surveys, it can be concluded that:

- there is a tendency towards the decrease in professional positions such as employee or teacher;
- there is considerable growth in the percentage of those who reaching high positions such as foreman or executive: this proportion is 10% of 1986 graduates only three years after graduation,while it was 1.4% of 1977 graduates and 4.3% of 1981 graduates five years after graduation;
- there is a growing trend towards independent professional positions.

This trend is confirmed by analysis by subject groups of 1986 graduates and the percentage of those who held, three years after graduation, the following positions: independent professional or executive, teacher and employee (see Table II/7).For the independent professional position (25.4% of total graduates), medical graduates represent the highest value (50.8% of them hold such positions), with graduates from agriculture (38%) and engineering graduates (35.7%) coming next, followed those who graduated in social and political sciences (11.2%), literature graduates (9.3%) poorly represented in independent professional positions.

Executive or foreman positions, which represent 10% of professional outlets of graduates, are relatively more common in those who graduated in social and political sciences (18.9%), in engineering (16.4%) and economic disciplines (14.6%).

For teaching positions, (15.2% of total graduates), the largest proportion are literature graduates (46.6%) and, to a lesser extent, scientific discipline graduates (17.6%).

Employees, which represent 22.8% of total graduates, seem to be the preferred position for economic graduates (44%) and social and political sciences graduates (40.4%).

The trend towards independency in professional position could be relevant in the future, because, on one hand, of the difficulties encountered by graduates in traditional professional outlets and, on the other hand, of the growing number of graduates in those areas traditionally addressing liberal professions (especially law and economic disciplines), as well as graduates from new types of higher education courses, which also look towards the independent professions.

Table II/7

Percentage of graduates in 1986 who after 3 Years work as independent professional, foreman or executive, teacher and employee, by subject groups

	% Indep. Prof.	% Executives	% Teachers	% Employees
Scientific	11.2	8.1	17.6	29.9
Medical	50.8	4.6	0.6	3.1
Engineering	35.7	16.4	5.8	28.8
Agriculture	38.0	13.8	5.0	14.7
Economic	22.1	14.6	9.2	44.0
Social/political science	11.2	18.9	7.3	40.4
Law	24.6	13.2	3.4	20.0
Literature	9.3	4.0	46.6	18.0
Total	25.4	10.0	15.2	22.8

Source: Indagine Istat sugli sbocchi professionali dei laureati, 1989.

2. Transition Conditions

Analysis of insertion of graduates in the world of work requires, first, an examination of the levels of graduate employment/unemployment and, secondly, a comparison of performance between graduates and those with lower degrees.

The overall situation of graduates in the Italian labour-force from 1984 to 1988 is shown in Table II/8. Total numbers in the graduate labour-force grew, but not consistently, from 1,424,000 to 1,556,000. Jobholders represent a proportion around 94% (94.7% in 1988).

Jobseekers can be divided into two groups: first-time job seekers, reaching 4.1% in 1985 but then dropping to 3.6% in 1988, and other jobseekers (mostly jobloosers), representing 1.7%. of the graduate labour-force in 1988. Thus, the global unemployment rate in 1988 for the graduate labour-force was 5.3%.

Table II/8

Graduates in the labour force

	1984	1985	1986	1987	1988
Condition					
Jobholders (Percentage Value)	1 348.000 (94.7)	1 303 000 (94.2)	1 238 000 (94.1)	1 390 000 (94.3)	1 474 000 (94.7)
First-Job Seekers (Percentage Value)	56 000 (3.9)	57 000 (4.1)	52 000 (4.0)	57 000 (3.9)	56 000 (3.6)
Jobseekers (Percentage Value)	21 000 (1.5)	23 000 (1.7)	25 000 (1.9)	26 000 (1.8)	26 000 (1.7)
Total Graduated Labour Force (Percentage Value)	1 424 000 (100.0)	1 383 000 (100.0)	1 315 000 (100.0)	1 473 000 (100.0)	1 556 000 (100.0)

Source: Rilevazione sulle forze di lavoro, Istat.

Periodical surveys conducted by ISTAT and qualitative surveys on the insertion of graduates lead to the same results and are shown in Table II/9: the first two columns show the occupational situation of people who graduated in 1977 and in 1981, five years after their graduation, while the third column indicates the situation of those who graduated in 1986, only three years after leaving university. While data on unemployment remains constant, there is an increase in the proportion of those who, five years after graduation, are still holding an unsteady job: 21.9% of 1977 graduates and 28.9% in 1981. The unemployment rate among 1986 graduates three years after graduation is much higher (26.5%) than for graduates five years after graduation, as well as the proportion of those holding an unsteady job (33.2%). 26.5% of graduates still without jobs after three years is high and, since the proportion of unemployed to total graduates is around 5%, it is possible to argue that graduates find it most difficult to find a job in the years immediately following graduation, when they may be obliged to accept an unstable job or even remain jobless.

Table II/9

Occupational situation of graduates (percentage composition)

Graduation in:	1977(a)	1981(b)	1986(c)
	5 years after graduation		3 years after graduation
Holding a Steady Job	72.8	65.4	40.3
Holding an Unsteady Job	21.7	28.9	33.2
Jobseeker	5.5	5.7	26.5 (*)
Total	100.0	100.0	100.0

(*) this figure includes 4.7 per cent not looking for a job because of further studies or military service.

Sources: (a) Ricerca sull'inserimento professionale dei laureati in Italia, Ministero della Pubblica Istruzione, 1982.
(b) Ricerca sugli sbocchi professionali dei laureati dell'Universita di Roma "La Sapienza", 1986.
(c) Indagine sugli sbocchi professionali dei laureati, ISTAT, 1989.

The analysis of unemployment rates by age and by sex confirms the difficult situation of insertion for graduates (see Table II/10): unemployment rates in the 25-29 age group are, during the period 1984-1988, notably higher than those for the 30-39 age group (in 1988 24.7% compared to 4.4%).

For changes over time, global figures show that the situation is worsening for the two age groups considered above, but in general the total unemployment rate for graduates has been on the decrease since 1984 (from 5.8% to 5.3%).

Female graduate unemployment rates are, in general, higher than total figures. In 1988, 28.4% of 25-29 year old female graduates were looking for jobs, compared with 6.2% of 30-39 year old women graduates. For women, the change over time shows an worsening in unemployment in the 25-29 and 30-39 age groups, but an improvement overall from 9.4% unemployment in 1984 to 8.5% in 1988.

Thus, though global unemployment rates have slightly decreased in the last five years, the insertion of graduates in the labour market is still extremely long and difficult, especially for women.

Table II/11 shows that the unemployment rates of non-graduate leavers are higher than those of graduates and, more importantly, have increased over the last five years (the global unemployment rate in Italy went from from 10.4% in 1984 to 12% in 1988). For people with primary school degrees, the unemployment rate grew from 5.9% to 8.3%; for junior secondary school

Table II/10

Graduates Unemployment Rates by Class of Age

		1984	1985	1986	1987	1988
M+F	25/29	23.8	24.9	24.6	27.3	24.7
	30/39	4.0	4.0	4.0	4.1	4.4
	Total	5.8	5.8	5.4	5.6	5.3
F	25/29	27.4	29.0	29.2	32.2	28.4
	30/39	6.1	6.1	6.2	5.9	6.2
	Total	9.4	9.4	8.8	9.2	8.5

Source: original processing of Istat (rilevazione sulle forze di lavoro).

Table II/11

Unemployment Rates by Educational Level

	1984	1985	1986	1987	1988
Primary School	5.9	6.3	7.3	8.2	8.3
Junior Secondary School	13.2	13.2	13.3	14.1	13.9
Senior Secondary School	15.4	15.3	15.0	15.4	15.6
University Graduates	5.8	5.8	5.4	5.6	5.3
Total	10.4	10.6	11.1	12.0	12.0

Source: Rilevazione sulle forze di lavoro, ISTAT.

degree-holders rose from 13.2% to 13.9%; the unemployment rate for senior secondary school degree-holders (the group most interesting to compare with graduates) went up from 15.4% to 15.6%.

The difficulties facing graduates in insertion into the labour market can be seen by analysing the average time spent by graduates in looking for a job and comparing it to that of senior secondary school degree-holders (see Table II/12).

Table II/12

Average time spent looking for a first job by university and senior secondary school graduates

(in months)

	1984	1985	1986	1987	1988
25/29 Graduates	17	19	19	21	18
30/39 Graduates	27	27	28	32	33
Total Graduates	19	20	21	23	22
Female Graduates	21	23	22	24	23
Secondary School graduates	21	22	23	25	27

Source: Rilevazione sulle forze di lavoro, ISTAT.

The average time (in months) spent by graduates in looking for a job was 19 in 1984, 20 in 1985, 21 in 1986, 23 in 1987 and 22 in 1988. Of note is the decrease in the 1988 figure, which may indicate a slowing down in the trend. Analysis by age shows that those in the 25-29 age group spend less time in looking for a job than 30-39 year olds (in 1988 18 months compared to 33).

Table II/12 also shows that the amount of time spent by female graduates and by secondary school diploma-holders in looking for a job. For women, the figures are higher than total figures, though in 1988 the situation shows an improvement (22 months compared to 23 months in 1987). Senior secondary school diploma-holders took longer than graduates to find a job and this time has increased from 21 months to 27 months over the past five years.

Differences in Transition within the graduate population

Having assessed the general situation of graduates in the labour-force and compared it with that of leavers from other levels of education, it is interesting to analyse the differences among graduates themselves.

Table II/13 shows the occupational situation in 1989 of those who graduated in 1986 by subject groups and by sex.

The figures show notable differences between the situation in general and that for women only. 50% of graduates are holding a steady job, while only 40.3% of women are doing so; 28.1% of graduates are holding an unsteady job, while 33.1% of women are doing so; 17.7% of total graduates are looking for a job, while 21.8% of women are in the same situation.

Table II/13

Situation of Graduates 3 Years after Leaving University

	Employed		Unemployed	
	Steady Job	Unsteady Job	Jobseekers	not Jobseekers *
Scientific	47.8	30.4	16.3	5.5
Medical	24.8	39.5	31.7	3.9
Engineering	71.4	20.0	6.8	1.8
Agriculture	53.2	25.1	17.7	4.0
Economics	72.3	19.8	6.1	1.8
Social and political Science	66.9	17.3	13.6	2.2
Law	50.7	11.6	27.0	10.7
Literature	41.4	40.3	15.8	2.6
Total M+F	50.1	28.1	17.7	4.1
Total F	40.3	33.1	21.8	4.7

(*) Graduates not looking for a job because of further studies or military service

Source: Indagine sugli sbocchi professionali dei laureati, ISTAT, 1989.

Analysis can also be made of the different performances of graduates according to subject areas. Taking as a base, 50.1% of graduates who hold a steady job, the proportion of graduates in different subject groups varies: in economic disciplines it is 72.3%; engineering 71.4%; social and political disciplines 66.9%; agriculture 53.2%; law 50.7%. Worthy of note is the fact that only 24.8% (the lowest figure of all) of medical graduates are in a steady job three years after graduation.

The percentages related to graduates holding an unsteady job (28.1% overall) reveal significant differences between one subject group and another: from 40.3% among graduates in literature disciplines, 39.5% among medicale graduates, 30.4% among graduates from scientific disciplines and only 11.6% among law graduates.

The proportion of jobseekers (17.7% of total graduates) by subject groups is also very interesting: medical graduates form the largest proportion, 27% of those in literature disciplines, 17.7% in agriculture, but only 6.8% of engineers and 6.1% of economic disciplines graduates.

It is interesting to note the disadvantaged situation of medical graduates and, to a lesser extent, of graduates in literature disciplines, while the best "performances" are related to engineers and to graduates in economic disciplines. Interesting also is the situation of law graduates, which show a low proportion of unsteady jobholders but a high level of unemployment.

Similar trends can be observed in Table II/14, which compares time spent in looking for a job by graduates in 1977 with that of 1981 graduates.

For the 1977 graduates the average time was 14 months, for graduates in economic sciences it was 9 months, 11 months for engineers, 16 months for medical and humanities graduates, and 17 months for education sciences.

For the 1981 graduates the average time was 16 months, showing extremely high values for education sciences graduates (26 months), humanities (25 months) and medicine (24 months) and lower values in for statistics graduates (14 months), engineering (14 months), architecture and economic sciences (both 19 months).

Table II/14

Average time spent looking for a first steady job
(in months)

Graduated in:	1977 (a)	1981 (b)
Architecture	15	19
Social/political Science	14	25
Medicine	16	24
Statistics	13	14
Economics	9	19
Law	13	22
Education Sciences	17	26
Engineering	11	14
Humanities	16	25
Natural Sciences (*)	11	22
Agriculture	15	- (**)
Total	14	16

(*) Including Mathematics
(**) not existing in Rome University

Sources: (a) Ricerca sull'inserimento professionale dei laureati in Italia, Ministero della pubblica istruzione, 1982.
(b) Ricerca sugli sbocchi professionali dei laureati dell'universita' di Roma "la Sapienza", 1986.

Methods of job search

In analysing transition conditions it is interesting to identify the most frequently used methods of jobsearch (see Table II/15).

> 18.2% of graduates used personal initiative.13.4% of all graduates, 27.4% of graduates in social and political sciences and 24.3% of literature graduates went through public examinations.
>
> 12.8% of graduates found a job through parents, relatives or friends and 12.5% found it by applying to schools or educational authorities in order to become teachers. Obviously this last proportion is higher for literature graduates (33.5%) and graduates in scientific disciplines (17.6%) than it is for other types of graduates.
>
> 8.9% found employment by creating an independent professional activity, especially among engineering (19.8%), agriculture (17.7%) and medical graduates (13.4%).

It is also interesting to examine the variation between subject groups in the proportion of graduates contacted directly by the firms themselves: overall the proportion was 7.6%, but 14.5% of graduates in economic disciplines, 14.3% of engineers and 10.7% of graduates in scientific disciplines were contacted by firms.

Job advertisements in newspapers are directed to both to graduate and non-graduate audiences (see Table II/16). 42.7% of advertisements are aimed at graduates in scientific disciplines, though the job most on offer is that salesperson for chemical firms. 28% of advertisements request engineers, thus confirming their good "performance" in making a successful transition to the labour market.

56.2% of total advertisements are aimed at non-graduates, suggesting that firms' new professional needs are oriented more towards middle-level qualifications, thus enhancing the importance of "intermediate" courses which are increasingly attracting the interest of students and institutions.

Job satisfaction among graduates

Table II/17 presents data on the satisfaction levels of graduates in relation to three aspects of their jobs: coherence with university studies, stability and salary.

Of total graduates, 69.9% are satisfied by the coherence of their work to university studies; with medical graduates espressing (for once!) the highest level of satisfaction (78.1%), followed by those in agriculture (76.5%) and in economic disciplines (73.3%), while the lowest level is found among graduates in social and political disciplines (45.1%). This last fact is probably related to the none too specialized preparation typical of social and political disciplines.

Table II/15

Ways in which Graduates found a job (percentages)

	Personal Initiative	Answering to Insertions	Direct Call by Firms	Through Parents/ Friends	Through University	Public Examin- ations	Existing Family Activity	Independent Profession. Activity	Applying to Schools	Other Ways
Scientific	21.2	10.4	10.7	14.2	6.4	7.5	4.6	2.0	17.6	5.4
Medical	21.4	0.5	1.0	12.9	6.7	7.7	6.0	13.4	0.6	29.9
Engineering	17.3	6.8	14.3	12.1	9.4	6.8	6.1	19.8	4.9	2.6
Agriculture	17.6	67.4	6.3	17.4	7.8	8.4	5.0	17.7	5.5	7.1
Economics	20.7	10.1	14.5	10.5	7.4	11.6	5.8	7.7	8.9	2.8
Social and Political Science	14.6	11.1	8.4	14.4	2.6	27.4	3.4	3.7	4.1	10.3
Law	18.2	8.0	4.9	14.0	3.4	24.3	9.3	8.7	2.3	6.9
Literature	14.5	4.3	2.0	11.9	4.0	19.7	2.8	2.5	33.5	4.8
Total	18.2	6.7	7.6	12.8	6.1	13.4	5.3	8.9	12.5	8.5

(*) to become teacher

Source: Indagine sugli sbocchi professionali dei laureati, Istat, 1989.

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Table II/16

Analysis of Employment insertions

Type of Degree Requested	for Graduates	Percentage on Total Insertions
Scientific Group (1)	42.7	18.7
Engineering	28.0	12.3
Economy and Business	9.5	4.1
Mathematics (2)	3.0	1.3
Law	1.9	0.8
Medicine	1.0	0.5
Agriculture (3)	0.8	0.4
Humanities	0.8	0.3
Architecture	0.5	0.2
Political Science	0.2	0.1
Degree not Specified	11.6	5.1
Total	100.0	43.8
Type of Job Offered	for non Graduates	
Various Jobs	56.3	31.6
Computer Operator	11.1	6.3
Salesman	32.6	18.3
Total	100.0	56.2
TOTAL		100.0

(1) including pharmacy
(2) including statistics and computer science
(3) including veterinary medicine

Source: Original processing of insertions from la repubblica and Corriere della sera, September/October, 1989.

Table II/17

Satisfaction of Graduates about some Aspect of their Present Work by Subject Group (percentages)

	Satisfaction about		
	Coherence with University Studies	Steadiness	Salary
Scientific	69.8	62.6	50.6
Medical	78.1	32.5	49.5
Engineering	72.0	65.6	51.6
Agriculture	76.5	57.5	52.1
Economics	73.3	76.7	65.8
Social/political sciences	45.1	76.7	51.2
Law	67.2	72.4	56.3
Literature	66.6	51.3	45.0
Total	69.9	59.7	52.2

Source: Indagine sugli sbocchi professionali dei laureati, Istat 1989

59.7% of graduates are satisfied with the stability of their work, but it is higher for the social and political and economic disciplines (in both groups 76.7%). Medical graduates express the lowest level of satisfaction with job stability (32.5%), reflecting the high rate of unsteady jobholders among them.

With regard to salary, 52.2% of graduates are satisfied, with the highest level of satisfaction to be found among graduates of economic diciplines (65.8%), and the lowest levels among medicine (49.5%) and literature disciplines (45%). Low salaries of public teachers or civil servants are reflected through these figures.

While these conclusions relate to traditional university graduates, anecdotal evidence would suggest that there is a disparity between the professional performances of those who attended Level 5 courses: for instance those from special purpose school or from university diploma courses are unlikely to meet real problems of insertion because of their specialization. However, those "graduating" from regional vocational training 2nd level courses do experience problems, because of the poor reputation of this training within the firms. For private schools and post-diploma courses of secondary schools, much depends on the reputation and the "manpower policies" of the schools themselves.

In conclusion, the disparities among different groups of graduates should be highlighted: in general graduates in engineering and in economic disciplines hold the most advantaged position in terms of their early careers, while other types of graduates experience extremely difficult transition conditions; notably, graduates in medicine and in literature disciplines, who undergo a long period of work instability before getting steady, but often less well paid, jobs.

SUMMARY

Summarising the data on **employment destinations**:

- a slight increase has been noted in the last five years in the proportion of graduates among jobholders (from 6% in 1984 to 7% in 1988); this proportion is higher among women (from 6.6% to 7.9%) but, both for men and women, is decreasing in 25-29 age group because, on one hand, of the length of university studies and, on the other hand, of the difficulty facing graduates in finding a first occupation;

- the percentage of women graduates among jobholders has increased from 35.7% in 1984 to 38.1% in 1989;

- in 1988, 90% of graduates worked in services sector (96.6% women), 9% in industry (only 3% women) and 1% in agriculture;

- within services approximately half the graduates worked in public services;

- typical professions such as civil servant and teacher seem to lower their proportion as graduate destinations, even though they represent together the largest portion: 71.3% on 1977, 51% on 1981 and 38% on 1986 graduates;

- independent professions are growing as graduate employment destinations (18.3% of 1977 graduates and 28% of 1981 graduates 5 years after graduation and 25.4% on 1986 graduates 3 years after graduation), because of the difficulty in graduate entry to the labour market and greater numbers of graduates in areas traditionally addressing the liberal professions.

Transition conditions, however, present a more complex picture:

- in 1988 5.3% of the Italian graduate labour-force were unemployed, but so were 24.7% of 25-29 year old graduates; indicating that that unemployment problems for graduates are mostly related to their initial insertion in the labour market;

- female graduate unemployment rates are higher than for male, but showed a decrease in 1988;

- though insertion remains a problem for graduates, they do better than those with lower levels of education (in 1988 unemployment rate among senior secondary school diploma-holders was 15.6%, compared to the already quoted 5.3% for graduates); moreover, graduates spent, on average, 22 months looking for a job, while diploma-holders spent 27 months;

- three years after graduation 50.1% of graduates have steady jobs (40.3% women), 28.1% an unsteady job (33.1% women) and 17.7% (21.8% women) are still jobseeking;

- the disparity of transition conditions among graduates highlights, on one hand, the very good "performance" of graduates in economic disciplines (72.3% of them holding a steady job and only 6.1% looking for a job), in engineering (71.4% have steady work and 6.8% jobseeking) and, on the other hand, considerable difficulties for graduates in medicine (only 24.8% have steady jobs and 31.7% are jobseeking) and in literature disciplines (40.3% of them hold unsteady jobs and 27% are jobseeking);

- methods of finding a job include personal initiative (18.2%), help of relatives or friends (12.8%), public examinations (13.4%) and direct application to schools in order to become teachers (12.5%);

- 69.9% of graduates express satisfaction about the coherence of their present work with their university studies (78.1% of medical graduates, but only 45.1% of social and political graduates;

- 59.7% of graduates are satisfied with their job stability (76.7% among graduates in social and political and economic disciplines, but only 32.5% of medical graduates);

- 52.2% are satisfied with their salary (65.8% among graduates in economic disciplines, but only 49.5% of medical graduates and 49% on those from literature disciplines).

It is reasonable to conclude that the decrease in traditional employment destinations, such as public sector, will continue as long as transition conditions are difficult for graduates headed for these destinations. Better transition conditions would be brought about with the development of new types of degree courses more suitable to the current needs of the labour market.

JAPON

JAPAN

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1 THE HIGHER EDUCATION SYSTEM AND ITS GRADUATES

This section sets forward the outline of the higher education system in Japan and describes the flow of students in the system.

1.1 The Higher Education System

1.1.1 The higher education system of Japan comprises following four types of instiutions:

a) University and College,
b) Junior College
c) Technical College, and
d) Special Training School.

All of these institutions or courses are legally mandated to be chartered by the Ministry of Education, Science and Culture (MESC) and require twelve years of primary and secondary education before admission, implying that entrants have to be 18 years of age or older. Not included here are proprietary schools (Kakushu Gakko) that do not qualify for Special Training School, and Occupational Training Centers under the Ministry of Labor or under local governments. Among the institutions above, those belonging to categories a) through c) constitute higher education in a strict sense, while d) form a segment comparable to post-secondary education in some other countries. The number of higher education institutions and their enrollment are summarized in TABLE 1.

Table 1

Number of Institutions and Enrollment, May 1990

	N. of Institutions	Enrollment (thds.)
University & College	507	2,133
Graduates		90
Under-Graduates		2,043
Junior College	593	479
Technical College	62	19 a)
Special Training School	2,581	612 b)

Source: Appendix Table A-1.
Notes: a) 4th and 5th graders only.
b) Post-Secondary courses only.

1.1.2 Four-year uiversities and colleges (both called "Daigaku") constitute the core of higher education in Japan. In the rest of the present paper the word "university" will be used to refer four-year institutions of higher education. As of May 1990, there were 507 (96 national, 39 local public and 372 private) institutions enrolling some 2.1 million students. Of these institutions about two-thirds offered graduate courses where 90 thousand students were studied for a Master's or Doctor's degree. Graduation from under-graduate courses normally requires four-years of course study, except for the cases of Departments of Medicine and Dentistry which demand six years.

1.1.3 Two-year Junior Colleges (Tanki-Daigaku), each being small in size, numbered 593 and enrolled half a million students. With student bodies predominantly female (90 percent), most of these institutions offer terminal education in non-technical subjects such as Literature or Home Economics. Unlike the case of the Community College in the United States, transfer from a two-year to a four-year institution is exceptional.

1.1.4 Technical Colleges (Koto Senmon Gakko) admit graduates from junior high schools. They require five years for completion, the first three years corresponding to upper secondary education and the latter two years to higher education. In 1990 there were 62 such institutions and they were concentrated in technical and engineering fields. The total enrollment was minor (less than 1 percent) compared to the whole higher education enrollment.

1.1.5 Special Training Schools (Senshu Gakko), on the other hand, constitute a rapidly growing segment in Japan's higher education. In most cases these institutions had originally been proprietary schools offering various types of occupational training before they received, at amendment of School Education Law, a charter from the Ministry of Education, Science and Culture. Their post-secondary courses require a high school diploma for admission. Most of these institutions provide occupational or technical training including computer programming and foreign languages. Reflecting the diversity of offered training, the curriculum and the years required for completion vary to a large extent. over the last decade, Special Training Schools showed a remarkable expansion; now, with the enrollment in their post-secondary courses totalling 612 thousand, they constitute the second largest segment of the higher educdation system.

1.1.6 One of the major characteristics of the higher education system in Japan is the significance of private institutions. About three-quaters (74.5 percent) of under-graduate enrollment in universities and colleges are enrolled in private institutions. The shares of private institutions in enrollment are even greater at junior colleges (91.4 percent) and at Special Training Schools (93.1 percent).

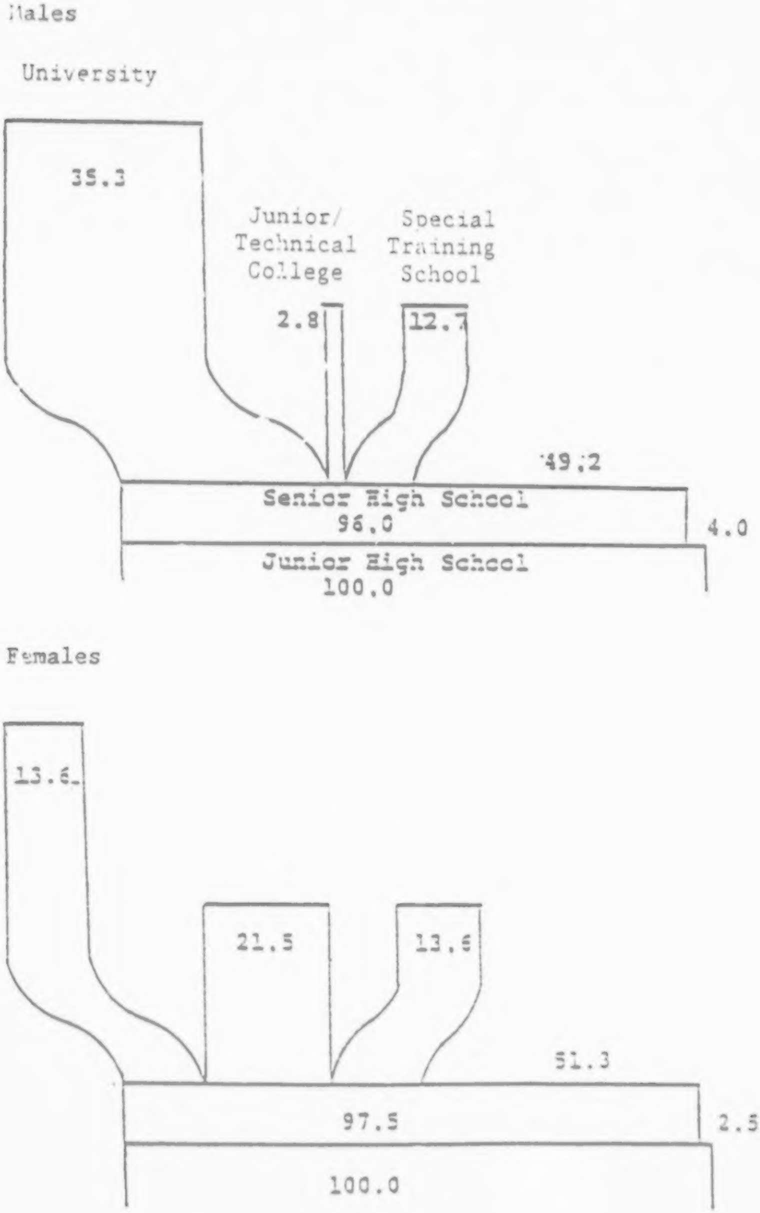
1.2 Flow of Students in the Education System

1.2.1 The flow of students through the education system is depicted in FIGURE 1. After completing junior high school at age 15, about 97 percent of an age cohort advance to upper secondary education provided at senior high schools. A small number of the students enter occupational training centers, secondary-level courses of Special Training Schools, or Miscellaneous Schools. The advancement rate of an age cohort to post-secondary education is 51 percent for males and 49 percent for females, implying that about a half of recent youths, either boy or girl, would experience some form of post-secondary education. The distribution over different types of post-secondary education, however, differs considerably by gender. While 35 percent of male cohort go to four-year universities and colleges, only 14 percent of female cohort would do so. Instead, as much as 22 percent of female cohort would enter two-year junior colleges compared to 3 percent (including Technical Colleges) for males. The share of those entering the post-secondary courses at Special Training Schools are similar between male and female, at around 14 percent of the age cohort.

1.2.2 The postwar trend of higher education enrollment in Japan can be divided into three phases as indicated in FIGURE 2. The first phase is the relative stability in the 1950s, when gross enrollment ratio (defined as the ratio of entrants to higher education institutions relative to the population reaching age 18 at the year) stayed around the 15 percent-level for males and around 5 percent for females. A rapid expansion of enrollment took place in the 1960s and in the first half of the 1970s, which resulted, despite the growth of eligible population with advancement of the baby-boom generation to college-going age, in a sharp rise in enrollment rates. By 1975, enrollment rates reached the 45 percent-level for males and 33 percent-level for females. In the third phase, which started in the mid-1970s and lasted to the present date, the enrollment to higher education showed a slight decline for males and stagnation for females. This is partly due to the shift in the demands for higher education, and partly due to the controlled supply of the places in higher education institutions under the government policy. Instead, Special Training Schools,

FIGURE 1

Flow of Students in the School System - % of Age Cohort, 1987

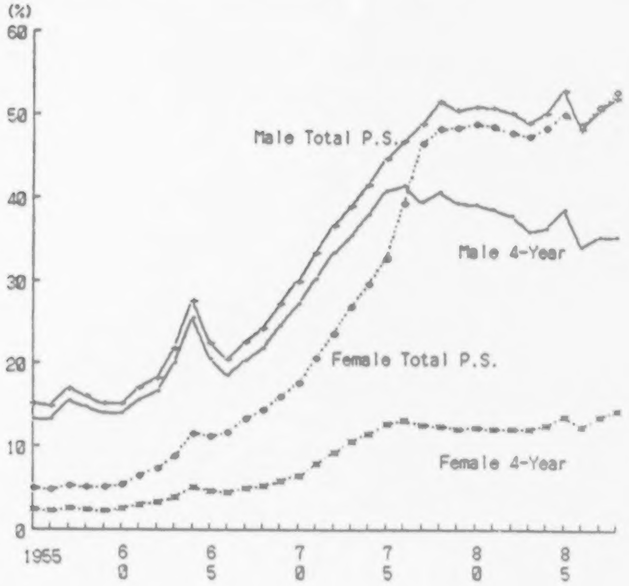

Males
University
35.3
Junior/
Technical
College
2.8
Special
Training
School
12.7
49.2
Senior High School
96.0
4.0
Junior High School
100.0
Females
13.6
21.5
13.6
51.3
97.5
2.5
100.0

Source: Estimated from School Fundamental Survey, 1987.

given a legitimate status in the educational system after revision of School Education Law in 1976, grew at impressive rates in the following period. As a result, the enrollment rate of the whole post-secondary education system for males showed a slight increase around the 50 percent level. That for females even marked a significant increase, from 33 percent in 1975 to 53 percent in 1988.

FIGURE 2

Changes in Enrollment Rates



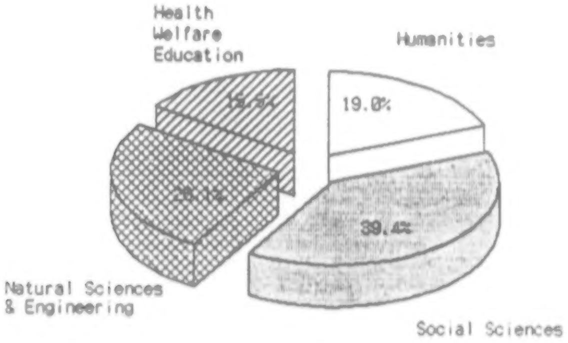
Source: Appendix Table A-3.

1.2.3 The distribution of enrollment over fields of study is presented in FIGURE 3. Of the students in four-year universities and colleges, more than half (58 percent) were enrolled in the Humanities, Social Sciences and related (HSS) fields, while about one-quater (26 percent) were in the Natural Sciences, Engineering and related (NSE) fields, and the remaining 16 percent in the Health, Welfare, Education and related (HWE) fields. The distribution, however, varies substantially by the type of institution.

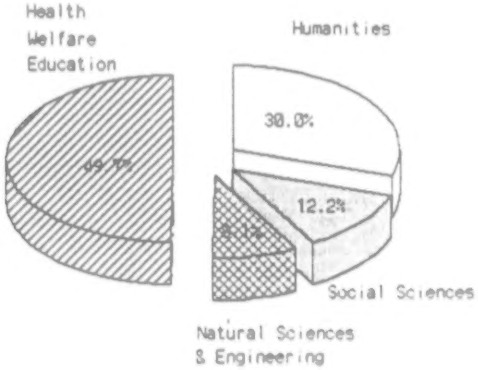
In national universities and colleges, only 27 percent were enrolled in the HSS fields, compared to 67 percent in private institutions (Appendix Table A-5A). Instead, enrollment in national institutions were more concentrated on the NSE fields (43 percent) and on the HWE fields (30 percent) than that in private institutions (22 percent and 11 percent). The pattern of distribution also varies substantially by gender. While for both male and female students, the share of the HSS fields amounted to slightly less than 60 percent, male students show greater concentration on the Social Sciences, and less on the Humanities, than female students. Outside the HSS fields, male students enrolled more in the NSE fields than female students (34 percent vs. 7 percent), or less in the HWE fields (10 vs. 30 percent).

FIGURE 3

Enrollment by Field of Study
- University, Both Sexes -



Enrollment by Field of Study
- Junior College, Both Sexes -



Source: Appendix Tables A-5A, A-5B and A-6.

1.2.4 The pattern of enrollment in two-year junior colleges is characterized with a heavier concentration on the HWE fields, especially on Home Sciences (25 percent of total enrollment) and on Education (17 percent). Even though the Humanities departments enrolled almost the same students as the Home Sciences departments, the HSS fields as a whole accounted for a less proportion than those in universities. This is primarily due to lower enrollment in the Social Sciences departments in junior colleges. Meanwhile, the NSE fields comprised a negligible 6 percent of junior college students. It should be noted that most of the male students in junior colleges were enrolled in those departments. Male students, however, constitute less than 10 percent of the total enrollment in junior colleges.

1.2.5 The enrollment in Special Training Schools concentrated on the fields for practical training. But within the technical fields, the distribution varied between the male and the female students. More than a half of the male students were studying in industry-related subjects, such as Electronics and Information Processing. In contrast, the most popular fields among female students were Health-Related (32 percent). Nonetheless, the second popular field was the same for the male and female students: about 17 percent of the male, and 19 percent of the female, students were in the Business-Related courses.

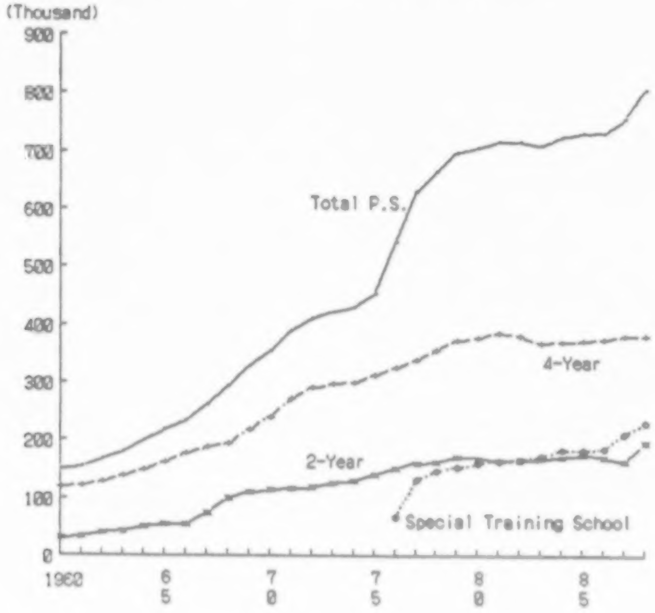
1.3 Structure of Flow from Higher Education

1.3.1 Due to the steady increases in enrollment rates, the size of flow from the higher education system has experienced a tremendous expansion over last three decades. The pattern of change, however, was at a slight variance from that of enrollment rates mentioned above, because of the involved time-lag and the changes in the size of eligible population. As FIGURE 4 demonstrates, the total number of the graduates from 4-year universities and colleges started growing in the 1960s, and accelerated in the early 1970s as the postwar "baby-boom" generation reached the age of graduation. Even though the rate of growth decelerated somewhat in the late 1970s, it reached the level of around 360 thousand per year by 1980. Since then, reflecting the controlled enrollment since the mid 1970s, the number of graduates has been stagnating.

1.3.2 The graduates from junior colleges followed a similar pattern of change to that of universities. Special Training Schools, on the other hand, did not start sending graduates until the late 1970s, but in the 1980s the number of their graduates kept increasing. Recently, the "second baby boom generation" have started to reach the eligible age for higher education, and the number of graduates from both junior colleges and Special Training Schools have risen rapidly.

FIGURE 4

Changes in the Number of Graduates



Source: Appendix Tables A-13 through A-19.

1.3.3 Looking back last three decades, it is impressive that the growth of the size of annual graduates from the whole post-secondary education system increased from 150 thousand to 800 thousand, or almost five times. How were the fresh graduates absorbed in the labor market every year, and how did the link between higher education and the labor market change over the period? The following sections of this paper shall investigate this issue from a few aspects.

2 THE FLOW OF GRADUATES TO WORK

2.1 College Graduates and Their Entry to Work

2.1.1 In April 1990, about 800 thousand students graduated from various institutions of higher education (TABLE 2). Of these students, one half, or 400 thousand (290 thousand male and 110 female), were the graduates from universities. Of the remaining 400 thousand, a half (208 thousand) graduated from junior colleges, and the other half (205 thousand) graduated from the Special Training Schools.

Table 2

Employment Status of Post-Secondary
Education Graduates, 1990

	Total Graduates	Employment Status				
		Further Education	Employed	Temporary Work	Not-Employed	Others
N. of Graduates						
University						
Male	290,353	23,222	241,201	1,631	12,531	11,768
Female	109,750	3,879	90,270	2,014	9,817	3,770
Both Sexes	400,103	27,101	331,471	3,645	22,348	15,538
Junior College						
Male	14,976	1,912	10,865	202	1,220	777
Female	193,382	5,086	170,266	1,965	13,323	2,742
Both Sexes	208,358	6,998	181,131	2,167	14,543	3,519
Special Training School a)	205,107	9,776	184,082	-	-	12,324
% Distribution						
University						
Male	100.0	8.0	83.1	0.6	4.3	4.1
Female	100.0	3.5	82.3	1.8	8.9	3.4
Both Sexes	100.0	6.8	82.8	0.9	5.6	3.9
Junior College						
Male	100.0	12.8	72.5	1.3	8.1	5.2
Female	100.0	2.6	88.0	1.0	6.9	1.4
Both Sexes	100.0	3.4	86.9	1.0	7.0	1.7
Special Training School	100.0	4.8	89.7	-	-	6.0

Note: a) Figures for 1987 Graduates. Numbers for individual categories of Status do not add up to the indicated total due to double entry to "Further Education" and "Employed."

2.1.2 According to the statistics compiled by the MESC, of the male graduates from universities, 83 percent were employed in a permanent job directly after graduation, 8 percent went to graduate courses, with the remaining 9 percent either temporary employed, unemployed or destination unknown. The employment status of the female graduates was almost similar, with the corresponding proportions at 82 percent, 4 percent, and 14 percent respectively. As for the junior college graduates, 87 percent were employed in permanent work, 3 percent transferred to four-year institutions, and the remaining 10 percent either in job, unemployed or unknown.

2.1.3 Since these statistics are based upon the reports from the university or college that each student graduated from, the categories "not employed" or "others" would presumably include the students who are actually in regular employment but did not report the fact by the time of graduation. Especially those graduates who found employment by themselves, and not through the placement office of the institution, are likely to fall in this category. The actual number of students who are unemployed in a strict sense, or those actively seeking employment and still unemployed, is considered to be minimal especially among male students.

2.1.4 For the graduates of the Special Training Schools, comparable data are not collected annually. However, in 1989 the MESC conducted a special survey on Speical Training Schools including in its scope the employment status of the graduates. According to the survey results, also presented in TABLE 2, as much as 90 percent of the graduates found permanent employment at the time of graduation, and 5 percent went either to universities or other institutions of higher education. The proportion of unemployed fresh graduates, defined as those looked for a work but failed to find one, is again considered to be minimal.

2.2 Microscopic Aspects of the Flow

2.2.1 It will be useful at this point to describe briefly the microscopic aspects of the flow of students from higher education institutions to work. A typical university student would start active job search activities at the beginning (April) of the fourth academic year. The student would consult with the placement offices and, sometimes, with his or her professor. Prospective employers, on the other hand, would contact with the placement offices in various institutions. Frequently, past graduates make informal contact with the present students in his alma mata.

In the summer, the employers would start accepting application and then invite selected students for interview and written examination. This process continues theoretically until all the prospective employees are matched with employers or until the end of the academic year, which is March. In practice, a majority of the students would be settled down by January. Most of the students employed for a permanent job start working on April 1.

2.2.2 It is important to note that the process of matching is the process of competition among the graduating students over better job opportunities, which tend to be those at better-paying and large scale corporations. It is also the process of competition among the prospective employers over desired students, who tend to be the ones from more selective institutions. This may apply to any society with free economy and the labor market. But, the competition may be particularly fierece in Japan, because the workers tend to stay in a single firm for the whole working life. Both for the employees and the employers, the choice at the point of graduation from higher education institutions determines the rest of the working life.

2.2.3 As a result, business firms are forced to undertake the process of interviews and examinations earlier every year, intending to secure better students. There has been serious concern that this should undermine education in the last academic year of higher education. Various associations of business leaders and the government thus have established a guideline stipulating a specific date after which the employers can start the process of recruiting. It is said, however, that this guideline has not been fully observed.

2.2.4 Another important aspect in the flow of graduates to work is how the students gain information about job opportunities. As noted above, the basic and formal source of information for the students is the placement office, which are normally attached to the institution or, in the case of large scale institutions, to each Faculty. More informal source of information is the professor and past graduates. The informations that these sources provide tend to be about the employers that have had relatively strong association with the institution. In the recent years, another source of information has gained importance. That is the commercial job information firms, that publish a collection of information about employers. Normally, these firms collect fees from employers and distribute free copies to the students. Also a few firms publish monthly or weekly newsletters listing various job opportunities. These information sources tend to carry information to students about employment opportunities that are not conveyed through more formal paths. The emergence of the commercial services has presumably helped the students to widen their scope of job search.

2.2.5 It is said that these changes, together with the recent short supply of college graduates, have brought about significant changes in the microscopic workings of the labor market for fresh college graduates. It is said that the traditional close links between a particular institution, or even a particular professor, on the one hand and a particular employer has been losing their significance. Instead, a wide range of information and contacts are exploited to match the prospective employees and employers. Nonetheless, there are few hard evidences about the magnitude of these microscopic changes. The significance of the impressionistic observations should be examined against more macroscopic analyses that will follow in the rest of this report.

2.3 The Field of Study and Employment Status

2.3.1 The employment condition varies substantially by the field of study. The distributions of university graduates over various employment status are presented by field of study in Appendix Tables B-1 and B-2. Basic statistics are summerized in TABLE 3. The table demonstrates in the first place that the proportion of the students entering graduate courses varies enormously. In the case of male graduates as much as 26 percent of the Natural Sciences graduates, and 17 percent of the Engineering graduates did so, while only the proportion was less than 1 percent among the Social Sciences graduates.[1] The low rate of employment at 80 percent does not therefore imply a poor employment prospect. From this aspect, it will be useful to define a rate expressing the proportion of graduates who, directly after graduation, either advanced to further education or went into permanent employment. We call this index a "direct advancement/employment rate" (d.a.e. rate). It would generally reflect the favorability of employment condition for college graduates.

2.3.2 Looking through TABLE 3 again, it is evident that the prospect of employment was more favorable for the Engineering graduates. Among the male university graduates the direct advancement/employment rate reached the level as high as 97 percent. The same rate is estimated at 93 percent for the departments of Natural Sciences and also 93 percent for Agriculture. In contrast, the graduates from the departments of Arts, Humanities and Education faced unfavorable employment prospects as indicated by the relatively low direct advancement/employment rates of 73 percent, 77 percent, and 79 percent.

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[1] The relatively high proportion of "Further Education" for Health-Related graduates in the Table reflects two factors. For one, the graduates from Pharmacology actually record high percentages of entering graduate courses. For another, graduates from Medicine or Dentistry are required to go through two years of internship after graduation, which is categorized as a form of further education.

2.3.3 TABLE 3 also demonstrates that a similar pattern of differences by subject fields can be observed about female university graduates. Female graduates from the NSE fields, though small in number, faced favorable employment prospects with the direct advancement/employment rates at well over the 90-percent level. Meanwhile, only less than 80 percent of the graduates from department of Arts or Education were reported to secure a permanent job or went to graduate courses. The lower direct advancement/enrollment rates for women was mainly due to their concentration on the subject fields characterized with less favorable employment prospects.

Table 3

Employment Status of Graduates from University
by Field of Study, 1989

	Distribution over Employment Status (%)							
	Male				Female			
	Total	Further Education	Employed	Temporary Work/ Not Employed/ Unknown	Total	Further Education	Employed	Temporary Work/ Not Employed/ Unknown
All Fields	100.0	10.0	80.1	9.9	100.0	4.8	78.4	16.8
Humanities	100.0	5.4	71.9	22.7	100.0	2.3	81.0	16.7
Social Sciences	100.0	0.8	88.4	10.8	100.0	1.8	82.3	15.9
Fine Arts/ Performing Arts	100.0	8.9	64.0	27.1	100.0	5.7	68.8	25.5
Natural Sciences	100.0	25.6	67.4	7.0	100.0	14.7	78.9	6.4
Engineering	100.0	16.7	80.7	2.6	100.0	11.4	85.4	3.2
Agriculture	100.0	15.3	77.8	6.9	100.0	8.7	83.0	8.3
Merchandise-Marine	100.0	36.6	62.1	1.3	100.0	87.5	12.5	0.0
Health-Related	100.0	59.4	27.2	13.4	100.0	20.1	65.2	14.7
Home Science	100.0	1.9	88.5	9.5	100.0	2.0	85.9	12.1
Education	100.0	4.9	73.7	21.4	100.0	3.1	75.1	21.8
Others	100.0	6.9	85.0	8.1	100.0	3.1	76.6	20.3

Source: Appendix Tables B-1 and B-2.

2.3.4 As for the graduates from 2-year institutions, direct advancement/employment rate reached almost the 90-percent level (Appendix Table B-3). Considering that the graduates are predominantly female, the employment prospects were even better for 2-year institutions. Moreover, the distribution over employment status did not vary much by subject fields. Even among the Humanities graduates, 90 percent obtained some form of stable employment or educational status.

2.3.5 The prospect of employment should have looked even brighter for the Special Training Schools graduates. According to the survey on Special Training Schools, the proportions of the graduates who are not employed in a permanent job or continuing study in other types of schools were negligible. The proportion was particularly small for the Engineering and Business fields, but, even for the graduates from such fields as Culture or Home Science, the corresponding figure was less than 10 percent. It should be noted that these figures are based on the reports from individual Special Training Schools. Since these institutions are mostly private with explicit goals of providing the students good employment opportunities, it is conceivable that their reports were somewhat biased upward. Nonetheless, other evidences indicate that the bias would not be exceedingly large.

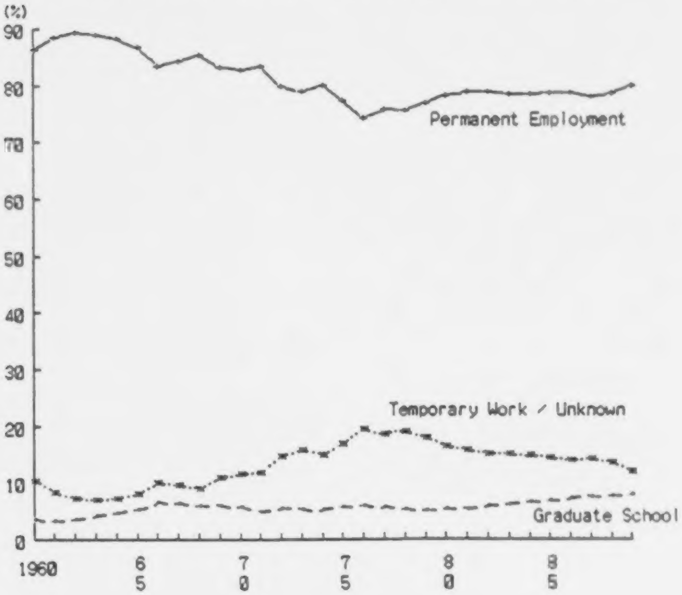
2.4 Trends in Employment Condition of Graduates

2.4.1 While the analysis above demonstrated that the present employment status for higher education graduates can be said to be generally favorable at present, there has been significant fluctuation over last three decades.

2.4.2 FIGURE 5, and Appendix Table B-5, present the changes for the male graduates from universities. The proportion of those who either went into permanent employment or advanced to graduate schools (direct advancement/employment rate) reached the 95 percent-level in the first half of the 1960s, when the number of college graduates were still limited even though the economy was already entering the epoch of rapid growth. But as the size of college graduates grew in the following period, the rate started declining. The trend was accelerated in the mid-1970s when, on the one hand, the number of college graduates increased substantially, and the economy underwent a painful restructuring in the wake of the oil crisis. As a consequence, the direct advancement/employment rate went down almost to the 80-percent level. The declining trend, however, was reversed in the late 1970s, and the employment status has shown a gradual recovery. Recently the rate has reached the 90-percent level. It should be observed also,

FIGURE 5

Employment Status of Graduates
- University, Male, All Field of Study -



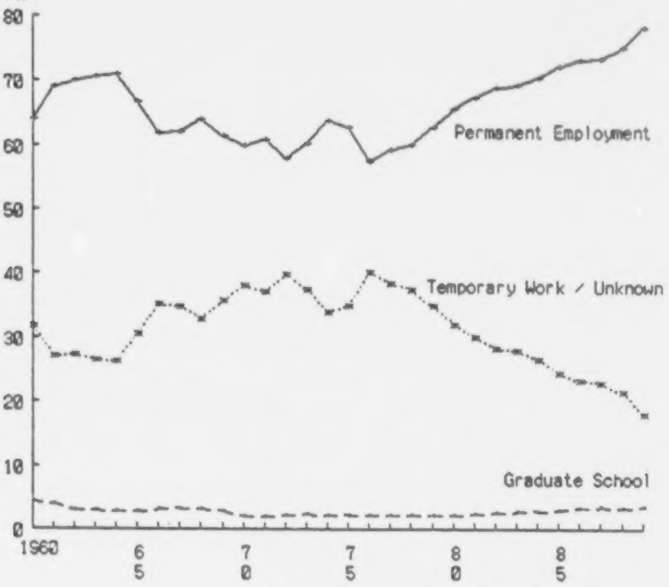
Source: Appendix Table B-5.

that despite the cyclical changes in over-all employment status, the share of graduates entering graduate courses has been increasing steadily, from around 4 percent in early 1960s to the present level of 8 percent.

2.4.3 FIGURE 6 indicates the similar factors in the labor market affected the employment of female university graduates. The proportion of those who advanced to further education or obtain employment directly after graduation declined from 74 percent in the early 1960s to 60 percent by the mid-1970s, but since then recovered substantially to rise to 83 percent by 1989. There is, however, a significant difference from the case of male graduates. In the 1960s the direct advancement/enrollment rate for female was considerably lower than that of male, and the subsequent decline led the rate to even lower level of 60 percent. But the increase since the late 1970s was even more vigorous than that for male. As a consequence, the difference in the d.a.e. rate by gender shrank substantially over the whole period, to only 6 percent-points (82 vs. 88 percent) in 1989, from 22 percent-points (68 vs. 90 percent) in 1960.

FIGURE 6

Employment Status of Graduates
- University, Female, All Field of Study -

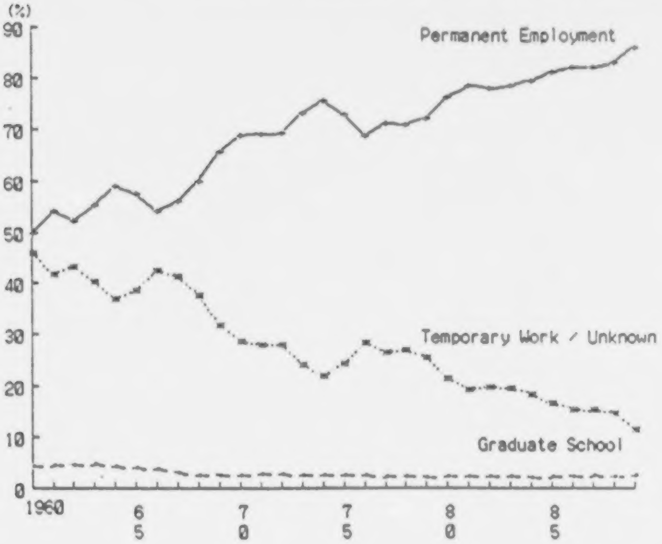


Source: Appendix Table B-6.

2.4.4 The long-range trend towards improved job prospect found with female university graduates appears more pronounced with the graduates from junior colleges of whom more than 90 percent are women. FIGURE 7 indicates that the proportion of graduates who either transferred to 4-year institutions or went into employment directly after graduation increased substantially over the three decades, from around the 50-percent level in the beginning of the 1960s almost to the 90-percent level by 1989. It is evident that the general deterioration of labor market in the mid-1970s did have some effect on these graduates, but its magnitude was much less than those observed with the graduates from universities.

FIGURE 7

Employment Status of Graduates
- Junior College, Female, All Field of Study -



Source: Appendix Table B-7.

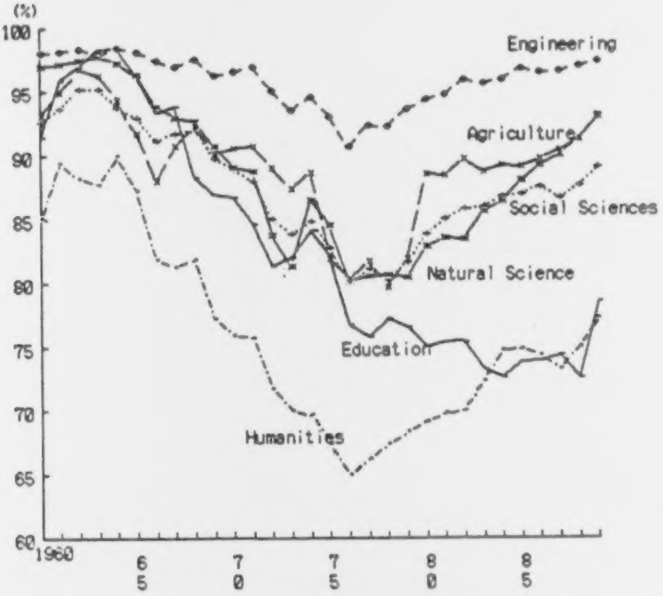
2.5 Trends by Field of Study

2.5.1 The cyclical pattern of change in job prospect has affected almonst all fields of study. But, the extent of the fluctuation varied substantially by the field of study.

2.5.2 The changes in direct advancement/enrollment rate for male college graduates from different fields of specialization are presented in FIGURE 8 and in Appendix Table B-8. It is evident that the fluctuation least affected the graduates from Engineering departments. In the beginning of the 1960s, the direct advancement/enrollment rate was as high as 98 percent and, even though the general decline of the rate did have an effect on those graduates, the same rate was still 91 percent in the bottom year of 1976. With the following general recovery, the rate has recovered to the 98 percent by the end of the 1980s. Other NSE fields were affected by the general trends to greater degrees. The d.a.e. rate for the graduates from the Natural Sciences or the Agriculture departments fell almost to the 80-percent level in the mid-1970, even it recovered beyond the 90-percent level in the late 1980s. The HSS fields present greater ranges of fluctuation. The d.a.e. rate for the Social Sciences departments went up to 95 percent in early 1960s, fell to 80 percent in mide-1970s, and rose to almost the 90-percent level in the latest statistics. The Humanities behaved even worse. After reaching the 90-percent level, it declined to 65 percent, and even after the recovery in the 1980s it is yet to reach the 80-percent level. The HEW fields present similar patterns. The graduates from Health-Related departments present a similar pattern to the Natural Sciences graduates, with the d.a.e. rate declining from 98 percent to below the 80-percent level, and then recovering almost to the 90-percent level. The only exception to the general trend is the Education graduates. The d.a.e. rate, having been as high as 98 percent in early 1960s, started declining in the 1960s, and did not recover in the 1980s as the other fields. Obviously, this reflects the changes in the demand for fresh teachers.

FIGURE 8

Direct Advancement/Employment Rates by Field of Study - University, Male -

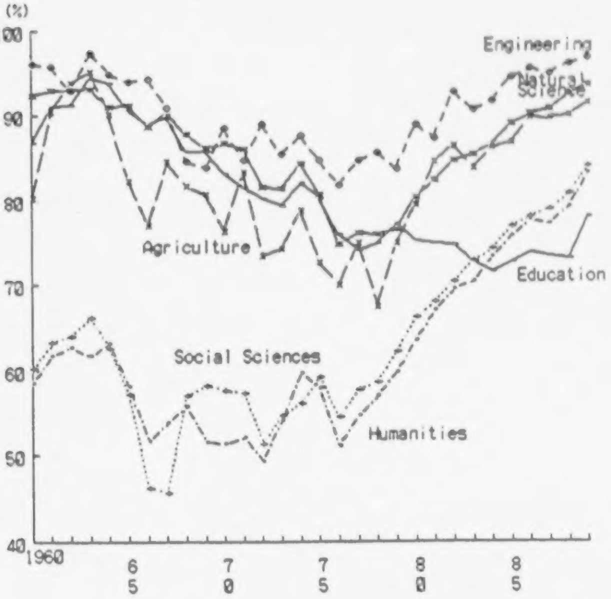


Source: Appendix Table B-8.

2.5.3 The differences from the case of male graduates become more evident by observing the changes in direct advancement/employment rate for different fields of study, as presented in FIGURE 9. The female graduates from the NSE fields, even though a minority, enjoyed favorable employment prospects even in early 1960s. They were affected by the deteriorating trends to more extents than experienced by the male counterparts, but with the recovery since the end of the 1970s the direct advancement/employment rate rose well beyond the 90-percent level. Meanwhile, the female graduates from the HSS fields that constituted the majority suffered from poor employment prospects. Especially the direct advancement/employment rate for the Humanities graduates stayed around the 60-percent level in the 1960s, and it fell down to around the 50-percent level in the 1970s. Nonetheless, since the late 1970s it has shown a steady and rapid rise to pass the 80-percent level by 1989. Similar pattern can be observed with the Social Sciences graduates. In contrast, the graduates from the HEW fields faired well in the 1960s, but the recovery since the 1970s has been less vigorous. It is particularly true with the Education graduates, whose d.a.e. rate once passed the 90-percent level in the 1960s. The same rate, however, declined in the subsequent years almost down to the 70-percent level without much recovery in the 1980s. As a consequence of these changes, the variance in d.a.e. rate for female graduates has become substantially less in the recent years. This draws a sharp contrast with the case of male graduates with which the corresponding variance has become greater.

FIGURE 9

Direct Advancement/Employment Rates by Field of Study
- University, Female -

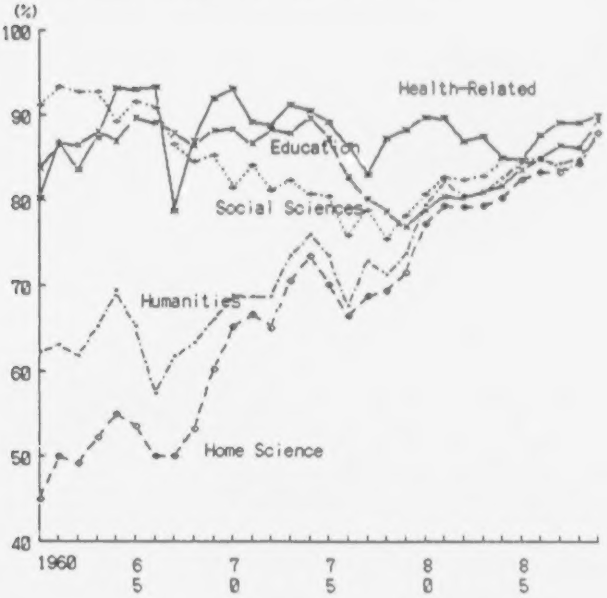


Source: Appendix Table B-9.

2.5.4 The d.a.e. rates for junior college graduates present a remarkable pattern of change over time, as observed in FIGURE 10. The graduates from Health-Related departments have traditionally enjoyed favorable job prospects, as indicated by the d.a.e. rate ranging around the 90-percent level. Meanwhile, for other departments the employment condition was much less promising. Typically, the graduates from Home Sciences departments, which are most likely to be considered as a form of preparation for becoming a good housewife, marked rather break d.a.e. rates below the 50-percent level in the 1960s. The situation, however, improved gradually in the subsequent years with a few fluctuations. In 1989, the same rate has reached the 90-percent level. The Social Sciences and Humanities graduates, who traditionally faced slightly better employment prospects than the Home Sciences graduates, nevertheless followed essentially similar patterns of change. As a consequence, the large variance in d.a.e. rate among the fields of study observed in the 1960s has become almost negligible as the d.a.e. rates converted to around the 90-percent level. The only exception was the Education graduates, whose d.a.e. rate remains at around the 80-percent level. The tendency towards conversion is similar to what found with female graduates from 4-year institutions. It should be also noted that the high direct advancement/employment rates for female graduates do not necessarily imply that they would stay in the job. So far, a good majority of them do leave the work after marriage or the birth of child.

FIGURE 10

Direct Advancement/Employment Rates by Field of Study
- Junior College, Both Sexes -



2.5.5 From the observations above, it can be argued that there were three factors behind the changes over last three decades. (i) The cyclical factor which reflected the shift in relative position of the supply and demand for higher education graduates. It created positive effects in the 1960s, then negative effects towards the mid-1970s, and again positive effects in the 1980s. (ii) The individual field factor, representing the supply-demand relation in each specific field of study. Its effect have been distinctively negative. Also, with the Social Sciences and Humanities it had negative effect particularly since the mid-1970s. (iii) The gender factor, which turned out to be positive for women, and consistently positive for women from junior colleges. It should be noted that the changes in the d.a.e rate itself does not necessarily reflect the changes in obtaining good job opportunities. It is probable that the effects of negative individual field factor found with the Social Sciences and the Humanities graduates reflect that many male graduates now find job not through placement offices and do not report their employment status to the institution. Likewise, the d.a.e rate for Education departments has been declining partly because many of the graduates found jobs other than teachers.

3 DESTINATION OF STUDENTS

3.1 Industrial Distribution of Employed Graduates.

3.1.1 In April 1990, about 1.4 million fresh graduates from various levels of schools and obtained regular jobs in Japan. TABLE 4 indicates that about one-half (54 percent) of these young people were graduates from post-secondary education, and one-quater (25 percent) were graduates from four-year institutions or graduate courses. The proportions of post-secondary graduates were almost equal between males and females, but the share of four-year institutions or above was greater for men (37 percent) than for women (13 percent).

Table 4

Estimated Number of Fresh Recruits to Industry
by Education Level, May 1990

	Number of Recruits			% Distribution		
	Total	Male	Female	Total	Male	Female
All Levels	1,413,042	707,728	705,334	100.0	100.0	100.0
Junior High School	39,896	27,997	11,899	2.8	4.0	1.7
High School	607,656	299,220	308,436	43.0	42.3	43.7
Post-Secondary	765,490	380,511	384,999	54.2	53.8	54.6
Graduate School	22,597	20,488	2,109	1.6	2.9	0.3
University	331,471	241,201	90,270	23.5	34.1	12.8
Junior College	181,131	10,865	170,266	12.8	1.5	24.1
Technical College	7,759	7,396	383	0.5	1.0	0.1
Special Training School a)	222,532	100,561	121,971	15.7	14.2	17.3

Note: a) Estimated from the number of graduates in 1990 and assuming employment rate of 89.75% derived from 1987 Survey on Special Training Schools.

3.1.2 The employed graduates from universities or junior colleges numbered about half a million, and their distribution over industrial sectors is presented in TABLE 5. It is shown in the table that slightly more than one-third of the graduates found employment in the Services and the Government, one-third in the other industries of the tertiary sector such as the Trade or Bank/Insurance, and the remaining one-third in the Production (primary and secondary) Sector, mostly in the Manufacturing industry.

The distribution, however, varied significantly by the type of institution and also by gender. The male graduates from four-year institutions tended to concentrate on the Production Sector (39 percent) and, within the tertiary sector, on Trade and Bank/Insurance (27 percent). In contrast, the female university graduates tended to concentrate less on these sectors (22 percent and 24 percent respectively), but more on the Services industry. Indeed, more than one-half of them were employed in the Services or in Government.

Table 5

Employment of Fresh Higher Education Graduates
by Industrial Sector, 1990

	Total	University			Junior College		
		Total	Male	Female	Total	Male	Female
Total N. of Employed Graduates	505,450	324,220	235,328	88,892	181,230	10,923	170,307
Percent Distribution (%)							
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Primary & Secondary Sector							
Total	30.4	34.3	39.0	21.9	23.3	31.6	22.8
Manufacturing	24.8	27.9	31.2	19.1	19.3	23.5	19.0
Others	5.6	6.4	7.8	2.9	4.0	8.2	3.8
Tertiary Sector							
Total	69.6	65.7	61.0	78.1	76.7	68.4	77.2
Trade	15.5	14.4	15.0	12.6	17.4	29.9	16.6
Bank/Insurance	15.0	12.7	13.4	10.9	19.1	2.6	20.2
Services/Transport	31.9	29.5	22.9	47.0	36.1	27.5	36.7
Government	6.6	8.4	9.0	7.0	3.3	6.5	3.1
Others	0.7	0.7	0.7	0.5	0.7	1.9	0.6

Source: Quick Report of School Basic Survey, 1990, Tables 5 and 13.

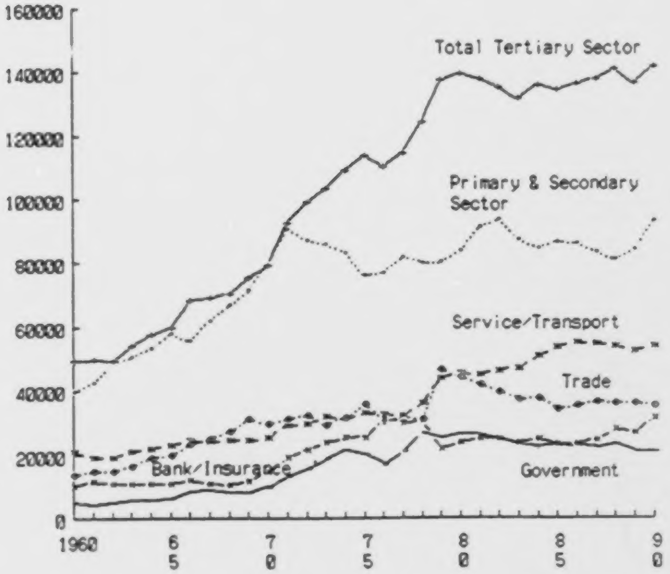
3.1.3 The junior college graduates as a whole appear to be less likely to find employment in the Production Sector. The proportion of the graduates in the sector was only 23 percent as compared to 34 percent in the case of the university graduates. The proportion, however, was not different from the case of the female university graduates. The female junior college graduates were more concentrated on Trade and Bank/Insurance than the female university graduates (37 percent vs. 24 percent), but less on the Services and Government (40 percent vs. 54 percent).

3.2 Changes in Industrial Distribution

3.2.1 The long-run trends in the size of male graduates from four-year institutions employed at each industrial sector are presented in FIGURE 11. It is demonstrated that from that perspective the whole period since 1960 to the present can be divided into three distinct phases, each roughly corresponding to individual decade. In the 1960s, the sizes of employment at the Production Sector on the one hand, and the tertiary sector on the other, were almost comparable to each other, and they expanded annually at similar rates. The two sectors absorbed respectively about 40 and 50 thousand graduates in early 1960s; by 1970, each employed about 80 thousand. In the 1970s, the annual flow to the Production Sector stagnated with some fluctuation in the range between the 70- to 80-thousand level, but that to the tertiary sector continued increasing, to reach the 140-thousand level by 1980. In the 1980s, employment at both sectors has been stable.

FIGURE 11

Employed Graduates by Industrial Sector
- University, Male, All Field of Study -

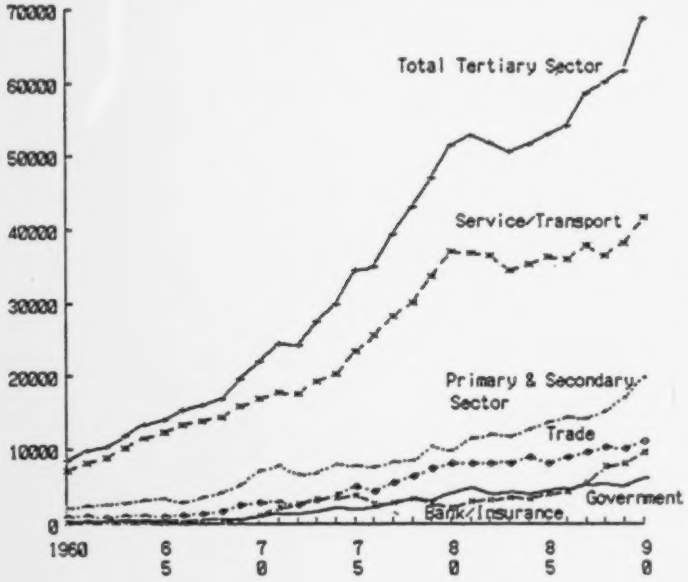


Source: Appendix Table C-2.

3.2.2 As for the female graduates from four-year institutions, the changes in employment draw a different pattern from that for male graduates. In 1960, the employed female graduates numbered about 10 thousand altogether, of which as much as 84 percent were employed at the tertiary sector. But at both sectors, the employment expanded steadily over the three decades. Especially the expansion of the employment at the tertiary sector has been remarkable, from less than 10 thousand in 1960 to more than 60 thousand in 1989. Meanwhile, the graduates employed at Non-Services Sector increased at even greater rates, and in 1989 they numbered 17 thousand. Now, the primary and secondary sector accounts for more than 20 percent of the total employment of female graduates.

FIGURE 12

Employed Graduates by Industrial Sector
- University, Female, All Field of Study -



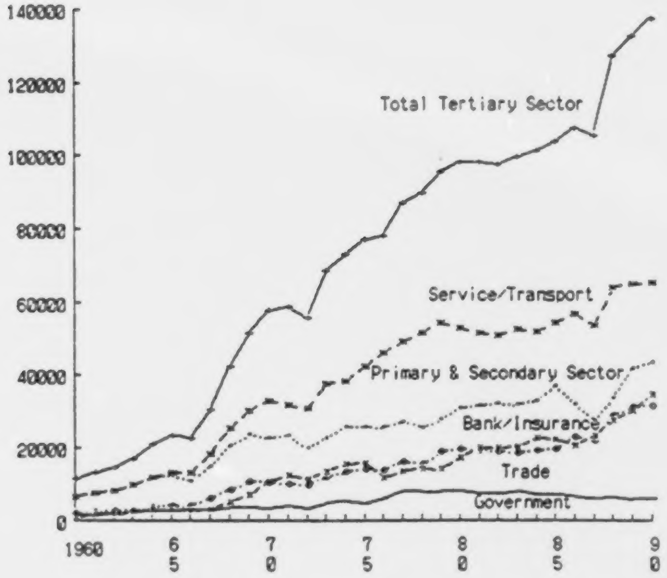
Source: Appendix Table C-3.

3.2.3 Due to the increase both in the number of total graduates and in the rate of employment after graduation, the number of employed graduates from two-year institutions has been increasing steadily over last three decades.

FIGURE 13 demonstrates the rapid expansion. In 1960, only 18 thounsand graduates entered employment; by 1989 the number increased almost ten times to 174 thousand. It is evident that the expansion is largely attributable to the increased employment opportunity in the tertiary sector. Particularly the Services/ Transport/ Communication industry has been the largest destination of the graduates from two-year institutions. In the 1980s, however, other industries in the tertiary sector, i.e. the Trade and the Bank/Insurance industries, have been expanding their intake rapidly. It also deserves attention that the graduates obtaining jobs at the secondary sector have been also increasing steadily.

FIGURE 13

Employed Graduates by Industrial Sector
- Junior College, Both Sexes, All Field of Study -



Source: Appendix Table C-4.

Table 9

Net Changes in the Size of Employed Fresh Higher Education Graduates by Industrial Sector

Period	Changes in Employed Fresh Graduates						
	All Industries	Primary & Secondary Sector	Services/ Transport	Trade	Bank/ Insurance	Government	Others
Increase in Employment							
University, Male							
1960-1970	69,871	42,060	3,992	15,881	4,811	5,006	-1,871
1970-1980	64,534	3,331	20,273	14,811	8,795	16,529	787
1980-1990	11,757	9,585	8,580	-8,800	7,771	-5,297	-83
University, Female							
1960-1970	18,650	5,130	9,829	2,090	1,046	599	-44
1970-1980	32,368	2,332	20,044	5,286	950	3,307	449
1980-1990	27,334	10,307	4,782	3,045	7,519	1,946	-264
Junior College, Both Sexes							
1960-1970	62,823	16,483	26,572	8,527	9,921	1,457	-137
1970-1980	48,416	6,884	20,259	9,106	6,212	4,836	1,119
1980-1990	52,074	13,403	12,260	11,802	17,442	-2,114	-718
% Distribution							
University, Male							
1960-1970	100.0	60.2	5.7	22.7	6.9	7.2	-2.7
1970-1980	100.0	5.2	31.4	23.0	13.6	25.6	1.2
1980-1990	100.0	81.5	73.0	-74.8	66.1	-45.1	-0.7
University, Female							
1960-1970	100.0	27.5	52.7	11.2	5.6	3.2	-0.2
1970-1980	100.0	7.2	61.9	16.3	2.9	10.2	1.4
1980-1990	100.0	37.7	17.5	11.1	27.5	7.1	-1.0
Junior College, Both Sexes							
1960-1970	100.0	26.2	42.3	13.6	15.8	2.3	-0.2
1970-1980	100.0	14.2	41.8	18.8	12.8	10.0	2.3
1980-1990	100.0	25.7	23.5	22.7	33.5	-4.1	-1.4

Source: Appendix Tables C-2, C-3 and C-4.

Note: The numbers for individual industrial categories do not add up to the Total due to rounding.

3.3 Correspondence between Field of Study and Industrial Sector

3.3.1 There have been some degrees of association between the field of study and the destination of the student in terms of industrial sector. TABLE 7 presents the flow of students from different fields of study to industries. It is evident that two fields of study stand out by its heavy concentration on particular industries. 73 percent of the Engineering graduates concentrates found employment in the

Table 7

Association between the Field of Study and the Sector of Employment - University, 1990

	All Sectors	Primay & Secondary Sector	Tertiary Sector				
			Trade	Bank/ Insurance	Services/ Transport	Govern-ment	Others
Total Number of Graduates							
All Fields	295,654	101,735	43,175	39,292	85,299	24,183	1,970
Humanities	47,950	9,875	8,580	5,896	19,782	3,460	357
Social Sciences	138,176	34,426	29,840	29,738	27,601	15,666	905
Natural Sciences	9,253	4,217	326	600	3,455	397	258
Engineering	65,015	47,395	2,330	1,797	10,248	2,910	335
Health-Related	9,802	3,555	742	73	5,155	259	18
Education	25,458	2,267	1,357	1,188	19,058	1,491	97
Percent Distribution (%)							
All Fields	100.0	34.4	14.6	13.3	28.9	8.2	0.7
Humanities	100.0	20.6	17.9	12.3	41.3	7.2	0.7
Social Sciences	100.0	24.9	21.6	21.5	20.0	11.3	0.7
Natural Sciences	100.0	45.6	3.5	6.5	37.3	4.3	2.8
Engineering	100.0	72.9	3.6	2.8	15.8	4.5	0.5
Health-Related	100.0	36.3	7.6	0.7	52.6	2.6	0.2
Education	100.0	8.9	5.3	4.7	74.9	5.9	0.4
Percent Distribution (%)							
All Fields	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Humanities	16.2	9.7	19.9	15.0	23.2	14.3	18.1
Social Sciences	46.7	33.8	69.1	75.7	32.4	64.8	45.9
Natural Sciences	3.1	4.1	0.8	1.5	4.1	1.6	13.1
Engineering	22.0	46.6	5.4	4.6	12.0	12.0	17.0
Health-Related	3.3	3.5	1.7	0.2	6.0	1.1	0.9
Education	8.6	2.2	3.1	3.0	22.3	6.2	4.9

Source: Appendix Tables C-3 through C-10.

primary and secondary sectors which include the manufacturing sector; and 75 percent of the Education graduates entered the Services/Transport industries, which include educational institutions. It also draws attention that the almost half of the Natural Sciences graduates went to the primary and secondary sectors, while more than half of the Health-Related graduates found jobs in the Services/Transport industries. In contrast, the Humanities and Social Sciences graduates present more even distribution with respect to their destination in the labor market.

3.3.2 It is also evident from TABLE 7 that the distribution with respect to the origin (graduating departments) of fresh recruits present various degrees of concetration by industry. More than 90 percent of the fresh college graduates entering the Trade and the Bank/Insurance industries were graduates from the Social Sciences and the Humanities departments. In contrast, of the fresh recruits to the primary and secondary sectors, 47 percent were from the Engineering departments and 34 percent were from the Social Sciences departments. The Services/Transport industries also present less degrees of concentration.

3.3.3 The association between the origin and destination of students has gone through substantial fluctuations over time as demonstrated by Appendix Tables C-5 through C-10. It is evident that the distribution over industrial sector appears to have been affected by economic fluctuations. One interesting example from this perspective is the graduates from the Humanities departments. The number and proportion of those entering the Bank/Insurance industry expanded substantially in the first half of the 1970s and again in the late 1980s. Both of these periods are characterised by relatively strong economy and shortage of college graduates. Also the proportion of the Natural Sciences graduates going into the Production Sector increased in the early 1970s when the sector was expanding its employment.

3.3.4 At the same time, there has been a distinctive trend in the distribution over destination. Appendix Table C-6 presents the changes over time in destination of the Social Sciences graduates. In the table one can observe a slight decline in the proportion accounted by the Production Sector and a slight increase in the proportion of the Services/Transport industry. As a result, the graduates from the Social Sciences departments now present more even distribution than thirty years ago. The same can be said about the Engineering department graduates. The proportion of those entering the Non-Services Sector has been steadily decreasing, while those entering the Services/Transport industry has been expanding. At least in these aspects, the traditional associations between a particular fields of study and a particular industry have been weakened, and the graduates tend to be distributed over different industrial sectors more evenly than before.

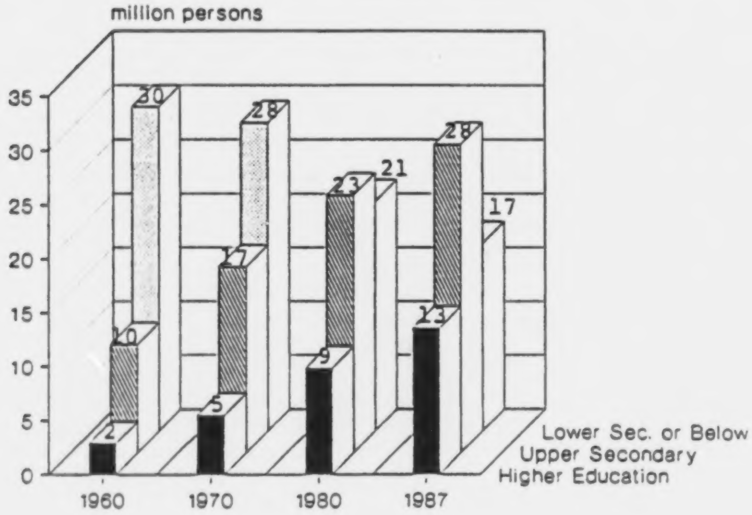
4 RECENT TRENDS IN THE SUPPLY AND DEMAND FOR EDUCATED LABOR

4.1 Increase in College-Educated Labor

4.1.1 Even though systematic analysis of the supply and demand for college-educated manpower lies beyond the scope of the present analysis, it will be useful to set the analyses in the broad context of the changes in force structure. The dramatic changes in educational composition of the Japanese labor force are presented in FIGURE 14. In 1960, college-educated workers numbered only about 2.9 million, or 5 percent of the total labor force. In less than three decades the size increased by 4.7 times. In 1987, there were 13.5 million workers with higher education, which accounted for 22 percent of the total labor force.

FIGURE 14

Changes in Labor Force by Education



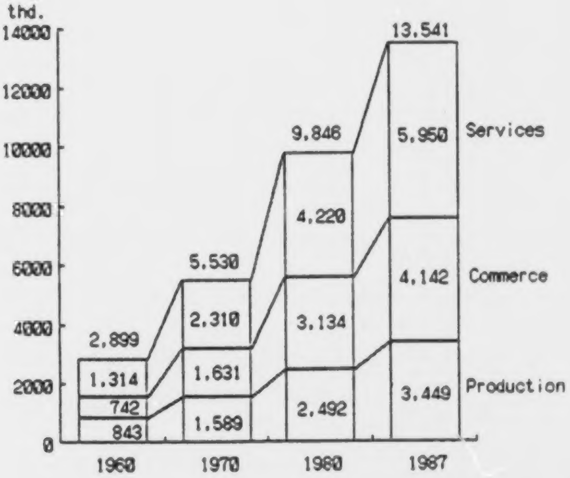
Source: 1960, 1970, 1980 Census, and 1987 Labor Force Survey.

4.1.2 Where in the industrial structure were the tremendous number of higher education graduates absorbed in such a short period? The changes in college-educated labor force by industrial sector are presented in FIGURE 15. In

1960, the Production Sector (Agriculture, Fishery, Forestry, Mining, Manufacturing, Construction and Electricity-Gas-Water) employed 843 thousand graduates from two or four-year institutions of higher education. By 1987, the number multiplied by the factor of 4.1. Even though the rate of increase was tremendous by its own standard, the rate was slightly lower than that of the increase in the total college-educated labor force. Consequently the share of the Production Sector shrank from 29 to 25 percent over the same period. Meanwhile, the Commerce Sector (Whole Sale-Retail, Bank-Insurance and Transportation) expanded its college-educated work force by as much as 5.6 times in the same period, thereby increasing its share from 26 to 31 percent. The most significant employer of college graduates has been the Services Sector (Business and Personal Services and Government). Its share has been stable since 1960 at around the 45 percent level.

FIGURE 15

Changes in the Size of College-Educated Labor Force by Industrial Sector



Source: Estimated from 1960, 1970, 1980 Census and 1987 Labor Force Survey.

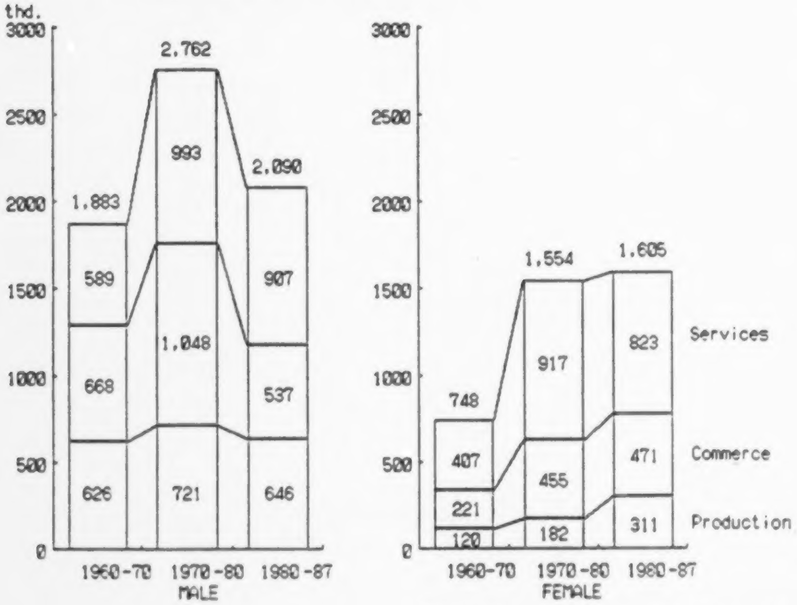
4.1.3 From 1960 to 1987, the total number of college-educated labor force increased by 10,642 thousand. Of the increase, 44 percent was accounted by the increase in those working in the Serivces Sector, 32 percent in the Commerce Sector, and the remaining 24 percnet in the Production Sector.

4.1.4 Another aspect of the change is the increase in the female labor force with higher eduction, that numbered only 341 thousand in 1960. By 1987, they increased about 13 times, to 4,301 thousand. The share expanded from 12 percent to 32 percent. It should be noted, however, that the majority of the increase was due to the increases in the graduates from two-year rather than four-year institutions.

4.1.5 Moreover, the pattern of relative contributions from different industrial sectors to the increase in employment of college-educated labor force has been shifting over time. FIGURE 16 demonstrates that in the 1960-1970 period, each of the three sectors contributed almost evenly to the expansion of employment of male college graduates. In the following 1970-1980 period, both the Commerce and the Services Sectors increased the magnitude of expansion. The Production Sector, however, appears to have lost its momentum in the 1980s. As for the female college graduates, more than half of the expansion was attributable to the Services Sector. The pattern did not change over the three periods. It is remarkable especially in contrast to the case of male college graduates, that the Production Sector has been steadily increasing the magnitude of expansion.

FIGURE 16

Contribution to the Increase
in College-Educated Labor



Source: Same as Figure 15.

4.2 Factor Decomposition Analysis

4.2.1 Another aspect of the rapid expansion of the college-educated labor is the relative significance of the shift in industrial structure and educational upgrading of each industrial sector. In order to approach this problem, a factor decomposition exercise was undertaken. It separates the increase in employment of college-educated labor into the following three components:

a) changes in the industrial composition of the labor force,

b) increase in the share of higher education graduates, and

c) their interaction.

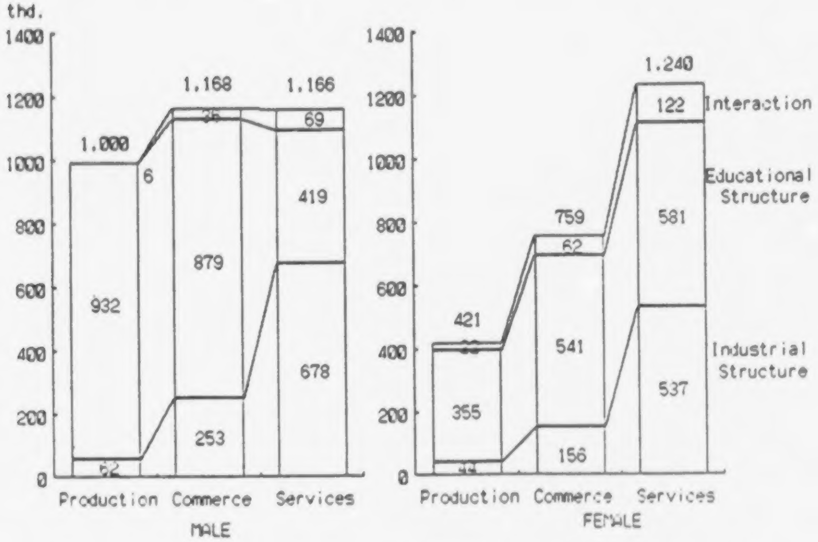
Expressed in mathematical terms, it can be written as

$$\begin{aligned} L = {} & (Lie/Li) \ast \Delta(Li/L) && \ldots(a) \\ + {} & (Lie/Li) \ast \Delta(Li/L) && \ldots(b) \\ + {} & \Delta(Lie/Li) \ast \Delta(Li/L), && \ldots(c) \end{aligned}$$

where Lie is the size of employment with the suffix i standing for industry and suffix e for educational background. The first term (a), corresponds to the effect of the increase in the size of the i'th sector, may be called the "sector size effect." The second term (b), representing the effect of the upgrading of the educational qualification of the i'th sector, may be called the "educational upgrading effect." The exercise based upon this formula was applied to the change in college-educated labor force during the ten-year period from 1977 to 1987. FIGURE 17 summarizes the results from this exercise.

FIGURE 17

Contributing Factors to the Increase in the Employment of Higher Education Graduates in 1977-87 Period



Source: Same as Figure 15.

4.2.2 As for male college graduates, the increase took place almost evenly in the three industrial sectors. Over the 1977-87 period, college-educated labor increased by 1.0 million in the Production Sector, by 1.2 million in the Commerce Sector and by 1.2 million in the Services Sector.[2] However, the factors behind the expansion were quite different. Employment of college graduates in the Production Sector expanded primarily due to the increase of the proportion of college graduates in the sector. In other words, replacement of lower educated labor with college graduates was the main reason for the increase of college graduates in the sector. In contrast, about 60 percent of the increase in the Services Sector was attributable to the increase in the size of employment in the Services Sector itself. Because the Services Sector had had the characteristic of employing greater proportion of college graduates, the rapid expansion of employment in the sector created the room of employing college graduates. The Commerce Sector showed a pattern in between the Production and the Services Sectors, with the effect of the Sector size accouting for 22 percent of total increase.

4.2.3 The changes in employment of female college-graduates draw a different pattern. In contrast to the case of male graduates, the expansion in employment was distributed unevenly among industrial Sectors. In the Services Sector, the employment of female college graduates increased by 1.2 million. The magnitude even slightly surpassed that for male. In the Commerce Sector, the increase was 0.76 million, and in the Production Sector it was only 0.42 million. As was the case for male, the expansion in the Production Sector was predominantly due to the effect of educational upgrading in the sector. Meanwhile, both the educatinal upgrading effect and the sector-size effect contributed almost the same to the increase in female college graduates in the sector. It reflects that the nature of work for female workers in the Services Sector changed in this period. As for the Commerce Sector, the educational upgrading effect played a significant part, accounting for 70 percent of the total increase, but the contribution of sector-size effect was innegligible.

4.3 Changes in Initial Salaries

4.3.1 The relation between the demand and supply of college-educated labor is supposed to be reflected in the changes in the level of their wage relative to high school graduates. The average wage level of college-educated workers age 20-24, taken from the Fundamental Wage Survey, was divided by the wage level of high school graduates at the corresponding age bracket to produce an index of relative wage. A time-series of this index was derived and presented in FIGURE 18.

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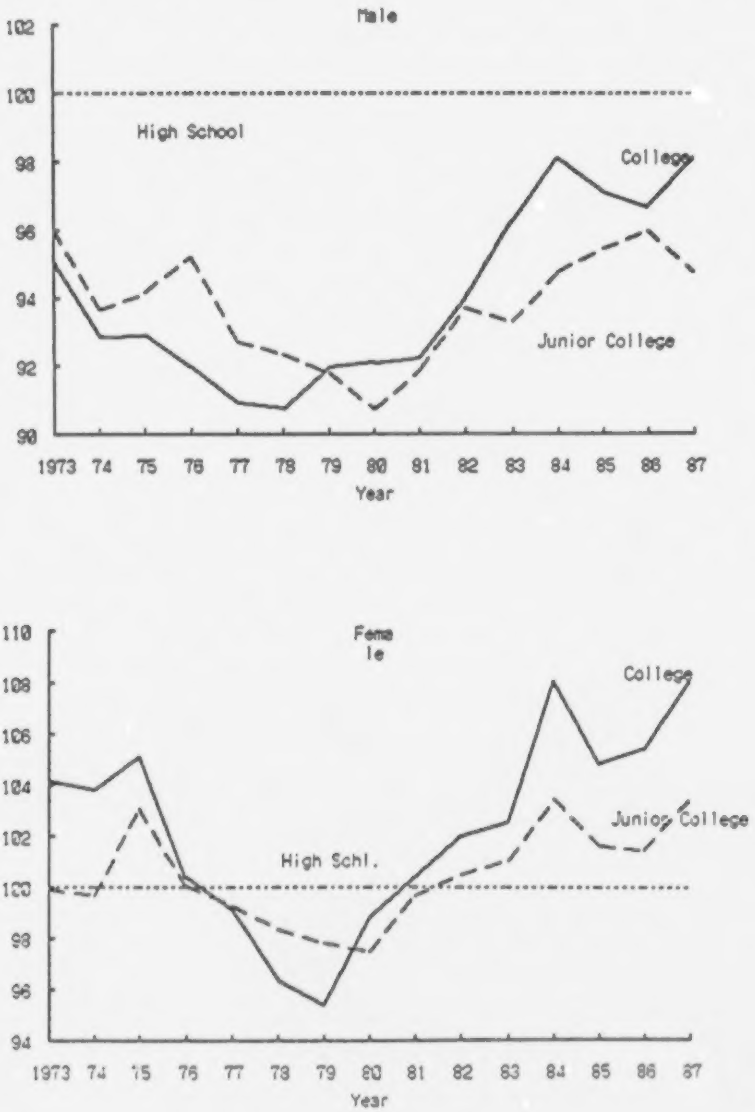
[2] In this exercise the industrial classification is slightly different from the one used ealier. Government is included in the Commerce Sector, not in the Services Sector.

FIGURE 18

Changes in Relative Wage Index by Education
- High School Graduates = 100 -



Source: Wage Census, various years.

4.3.2 The upper half of the figure presents the changes for male college graduates. It should be noted that, computed from the average wage levels at the age bracket 20-24, the relative wage ratio can be lower than 100, indicating that college-educated workers are paid slightly lower than the high school graduates. That is because at this age high school graduates have accumulated several years of work experiences, whereas college graduates have few experiences. It is only after the college graduates spent several years that their average wage surpasses that for high school graduates at the same age bracket.

4.3.3 Observing the figure over time, one should notice the downturn towards the end of the 1970s, and the upturn in the 1980s. From 1973 to 1978, relative wage index for four-year college graduates declined from 95 to 91. Since the end of the 1970s, however, the index started rising again to reach the level of 98 by late 1980s. The trend has been continuing, and the most recent data indicates that this index has surpassed the 100-point level. The wage level of the graduates from two-year institutions (including both junior college and Special Training School) followed similar pattern, at a slight time-lag and with slightly less magnitude of fluctuation.

4.3.4 Discussion about the factors behind this fluctuation requires systematic analyses about the supply and demand of college-educated labor in the context of economic trends and structural changes, which is beyond the scope of the present analysis. Nonetheless, one may argue at this point that the downturn in the 1970s may have reflected two factors. On the supply side of college graduates, the rapid increase in enrollment rate together with the graduation of the postwar baby-boom generation created in early 1970s an unprecedented size of fresh graduates entering the labor market. On the demand side, the oil-shock in 1975 and the following readjustment of economic structure caused a serious pressure on business firms against hiring fresh graduates. Both of those factors were reversed in the 1980s. On the supply side, because of the stable enrollment rate since mid-1970s and the cohort size, the size of college graduates has been stable in the 1980s. On the demand side, the business firms have completed restructuring and started expanding new activities which tend to demand the workers higher technical or cultural skills.

4.3.5 The pattern of change observed with males can be applied to that of female college graduates. Particularly, the female graduates from four-year institutions draw a pronounced pattern even with a greater magnitude of fluctuation. In the phase of downturn in the 1970s, it marked a decline of 10 points, and in the phase of upturn it rose by 13 points. The change for junior college graduates was more subdued. The same factors of supply and demand as those for male graduates are considered to be behind the case of female graduates. The greater extent of fluctuation of the female graduates from four-year colleges is arguably indicating their marginal status in the labor market. One should remember, however, the size of newly employed female college graduates has increased tremendously over this decade. In this aspect, there has been, quite apart from the cyclical changes, a distinctive structural shift in the supply-demand relation for female university graduates.

5 CONCLUSIONS

Over last three decades the size of higher education graduates in Japan has experienced a tremendous expansion. In the process the structure of the flow of higher education graduates to work has experienced significant changes.

Most conspicuous is the cyclical factor reflecting the changes in the macroscopic supply-demand relation of higher education graduates. The changes in employment status of fresh graduates, together with the levels of relative initial salaries, suggested that there was relative decline of the demand for college-educated labor in the late 1960s to the mid-1970s, and relative increase in the demand since the end of the 1970s to the present. In this sense, the supply-demand relation has drawn a full cycle in the period from 1960 to the present.

Quite apart from the cyclical factor, there have been consistent trends developed steadily in the three decades. One distinctive trend is the move towards loosened link between the higher education and work. The direct advancement/employment rates, particularly for male graduates from the Social Sciences, Humanities and Education departments, have been declining over the three decades. Also, there have been indications of declining association between particular fields of study and particular industrial sectors.

On the other hand, the link between higher education and work has been strengthened for women. It was particularly with the female graduates from junior colleges. Traditionally, junior college education, especially in the departments of Humanities and Social Sciences, tended to be considered as a step of preparation for becoming a good housewife. But the direct advancment/employment rates have shown steady and substantial increase over last three decades for all fields of study. Also with the female graduates from universities, the improvement in employment prospect since the late 1970s.

These observations indicate that the changes in the flow of graduates reflect some fundamental shifts in the supply and demand for college-educated labor. More systematic analyses will be called for to investigate their nature. Such analyses will provide the keys to explore the future of the labor market, and the role of higher education in the coming society and economy.

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Appendix Table A-1

Higher Education Institutions and Their Enrollment, SY 1987
— By Type and by Control of Institution —

	Control of Institution				Percent Private (%)
	All	National	Local Public	Private	
NUMBER OF ESTABLISHMENT					
Four-Year Institutions	507	96	39	372	73.4
Two-Year Institutions	593	41	54	498	84.0
Technical Colleges	62	54	4	4	6.5
Special Training Schools 1)	2,581	159	166	2,256	87.4
ENROLLMENT (in thousands)					
Graduate Courses	90	58	4	28	31.1
Undergraduate					
Total	2,657	509	83	2,097	78.9
Four-Year Institutions	2,043	461	60	1,522	74.5
Two-Year Institutions	479	18	23	438	91.4
Corresponding Courses	167	30	-	137	82.0
Post-Secondary					
Technical Colleges 2)	19	17	2	1	5.3
Special Training Schools 3)	612	17	25	570	93.1
All Levels	6,067	1,110	197	4,793	79.0

Source: MOESC, Quick Report of the 1987 Fundamental School Survey.
Notes: 1) Post-Secondary courses only.
2) Total of students at 4th and 5th year.
3) Post-Secondary courses only.

Appendix Table A-2

Estimated Enrollment and Advancement Rates by Level of Education, 1987

	Total	Male	Female
COMPULSORY LEVELS			
Enrollment Rate			
Primary (Ages 6-11)	99.99	99.99	99.99
Lower Secondary (Ages 12-14)	99.99	99.99	99.99
POST-COMPULSORY LEVELS			
Advancement Rate at Age 15 a)	96.6	96.0	97.5
of which			
Upper Secondary	94.3	93.2	95.4
Vocational Training Courses	2.3	2.8	2.1
Advancement Rate at Age 18 b)	50.9	50.8	51.1
of which			
Special Training School	14.3	12.7	16.0
Technical College	0.5	1.0	0.0
2-Year Institution	11.4	1.8	21.5
4-Year Institution	24.7	35.3	13.6

Sources: MOESC, School Basic Survey, SY 1987, Table 211 (pp.542-547);
RIHE Higher Education Aggregate Data Base Table 169-171.

Notes: a) Entrants to upper-secondary courses divided by the size of population age 15.

b) Entrants to post-secondary courses divided by the size of population age 18.

Appendix Table A-3

Estimated Gross Enrollment Ratio — Male

Year	N. of 18 year olds (thds.)	Gross Enrollment Ratio (%)				
		4-Year Insts. (1)	2-Year Insts. (2)	Higher Education Total (3)=(1)+(2)	Special Training School (4)	Total (3)+(4)
1960	1,026	13.9	1.2	15.1	-	15.1
1961	972	15.6	1.5	17.1	-	17.1
1962	1,009	16.7	1.6	18.3	-	18.3
1963	905	20.1	1.9	21.9	-	21.9
1964	718	25.4	2.3	27.6	-	27.6
1965	1,001	20.5	2.0	22.5	-	22.5
1966	1,278	18.6	1.9	20.5	-	20.5
1967	1,244	20.4	2.2	22.6	-	22.6
1968	1,209	21.9	2.3	24.3	-	24.3
1969	1,092	24.6	2.6	27.2	-	27.2
1970	997	27.2	2.8	30.0	-	30.0
1971	944	30.3	3.1	33.4	-	33.4
1972	889	33.4	3.3	36.7	-	36.7
1973	853	35.5	3.6	39.1	-	39.1
1974	830	38.0	3.6	41.6	-	41.6
1975	798	40.9	3.8	44.8	-	44.8
1976	777	41.5	3.7	45.1	1.8	46.9
1977	830	39.5	3.4	43.0	5.9	48.9
1978	809	40.7	3.5	44.2	7.4	51.6
1979	800	39.3	3.3	42.6	8.0	50.6
1980	810	39.2	3.2	42.3	8.6	51.0
1981	822	38.6	3.1	41.6	9.2	50.9
1982	838	37.8	3.0	40.9	9.4	50.3
1983	882	36.0	2.9	38.9	10.2	49.1
1984	858	36.4	3.0	39.3	10.9	50.3
1985	798	38.6	3.2	41.7	11.3	53.0
1986	948	34.1	2.8	36.9	11.5	48.4
1987	966	35.3	2.8	38.1	12.7	50.7
1988	965	35.3	2.8	38.1	14.0	52.1

Sources: RIHE Higher Education Databook, Tables 170 and 171.
Notes: (2) includes entrants to Technical Colleges.
(3) includes post-secondary courses only.

Appendix Table A-4

Estimated Gross Enrollment Ratio - Female

Year	N. of 18 year olds (thds.)	Gross Enrollment Ratio (%)				
		4-Year Insts. (1)	2-Year Insts. (2)	Higher Education Total (3)=(1)+(2)	Special Training School (4)	Total (3)+(4)
1960	995	2.5	3.0	5.4	-	5.4
1961	945	3.0	3.5	6.4	-	6.4
1962	982	3.3	4.0	7.4	-	7.4
1963	881	3.9	5.1	8.9	-	8.9
1964	695	5.1	6.4	11.5	-	11.5
1965	959	4.6	6.6	11.3	-	11.3
1966	1,225	4.5	7.2	11.7	-	11.7
1967	1,196	4.9	8.4	13.3	-	13.3
1968	1,160	5.2	9.2	14.4	-	14.4
1969	1,049	5.8	10.2	16.0	-	16.0
1970	956	6.5	11.2	17.7	-	17.7
1971	907	7.9	12.8	20.7	-	20.7
1972	853	9.3	14.3	23.6	-	23.6
1973	817	10.6	16.4	27.0	-	27.0
1974	794	11.6	18.1	29.7	-	29.7
1975	766	12.7	20.1	32.8	-	32.8
1976	746	13.2	20.9	34.1	5.4	39.4
1977	796	12.6	20.7	33.2	13.2	46.5
1978	774	12.4	21.0	33.4	14.9	48.3
1979	766	12.2	20.9	33.0	15.4	48.5
1980	772	12.3	21.0	33.3	15.6	48.9
1981	787	12.2	20.7	23.9	15.7	48.6
1982	799	12.2	20.5	32.7	15.3	47.9
1983	844	12.2	19.9	32.1	15.2	47.4
1984	821	12.6	20.1	32.8	15.8	48.5
1985	760	13.7	20.8	34.5	15.8	50.2
1986	905	12.5	21.0	33.5	15.4	48.8
1987	918	13.6	21.5	35.1	16.0	51.1
1988	918	14.4	21.9	36.2	16.5	52.8

Sources: RIHE Higher Education Databook, Tables 170 and 171.
Notes: (2) includes entrants to Technical Colleges.
(3) includes post-secondary courses only.

Appendix Table A-5A

Enrollment by Broad Category of Departments and by Type of Establishments
4-Year Institutions, 1989

	N. of Students				% Shares			
	Total	National	Local Public	Private	Total	National	Local Public	Private
All Departments	1,929,137	424,144	53,379	1,451,614	100.0	100.0	100.0	100.0
HSS	1,126,002	114,135	33,104	978,763	58.4	26.9	62.0	67.4
Humanities	290,387	27,437	11,334	251,616	15.1	6.5	21.2	17.3
Social Sciences	759,636	68,777	18,899	671,960	39.3	16.2	35.4	46.3
Liberal Arts & Related	28,974	15,476	608	12,890	1.5	3.6	1.1	0.9
Fine/Performing Arts	47,005	2,445	2,263	42,297	2.4	0.6	4.2	2.9
NSE	510,064	180,996	9,582	319,486	26.4	42.7	18.0	22.0
Natural Sciences	63,997	26,922	1,911	35,164	3.3	6.4	3.6	2.4
Engineering	379,405	120,049	6,260	253,096	19.7	28.3	11.7	17.4
Agriculture	64,975	32,338	1,411	31,226	3.4	7.6	2.7	2.2
Merchandise-Marine	1,687	1,687	-	-	0.1	0.4	0.0	0.0
HWE	293,071	129,013	10,693	153,365	15.2	30.4	20.0	10.6
Health/Medicine	117,712	38,039	6,406	73,267	6.1	9.0	12.0	5.0
Home Science	35,794	1,216	2,890	31,688	1.9	0.3	5.4	2.3
Education	139,565	89,758	1,397	48,410	7.2	21.1	2.7	3.3

Source: School Fundamental Survey 1989, Table 11.

Appendix Table A-5B

Enrollment by Broad Category of Departments — 4-Year Institutions, 1989

	N. of Students			% Shares		
	Total	Male	Female	Total	Male	Female
All Departments	1,929,137	1,410,854	518,283	100.0	100.0	100.0
HSS	1,126,002	798,881	327,121	58.4	56.6	63.1
Humanities	290,387	101,997	188,390	15.1	7.2	36.3
Social Sciences	759,636	660,659	98,977	39.4	46.8	27.3
Liberal Arts & Related	28,974	19,788	9,186	1.5	1.4	1.8
Fine Arts/Performing Art	47,005	16,437	30,568	2.4	1.2	5.9
NSE	510,064	473,210	36,854	26.4	33.5	7.1
Natural Sciences	63,997	52,302	11,695	3.3	3.7	2.3
Engineering	379,405	366,565	12,840	19.7	26.0	2.5
Agriculture	64,975	52,730	12,245	3.4	3.7	2.4
Merchandise-Marine	1,687	1,613	74	0.1	0.1	0.0
HWE	293,071	138,763	154,308	15.2	9.8	29.8
Health/Medicine	117,712	73,846	43,866	6.1	5.2	8.5
Home Science	35,794	455	35,339	1.9	0.0	6.8
Education	139,565	64,462	75,103	7.2	4.6	14.5

Source: School Fundamental Survey 1989, Table 41.

Appendix Table A-6

Enrollment by Broad Category of Departments — 2-Year Institutions, 1989

	N. of Students			% Shares		
	Total	Male	Female	Total	Male	Female
All Departments	455,696	40,174	415,522	100.0	100.0	100.0
HSS	204,550	15,792	188,758	44.9	39.3	45.4
Humanities	115,746	1,849	113,897	25.4	4.6	27.3
Social Sciences	55,489	12,056	43,433	12.2	30.0	10.5
Liberal Arts	12,349	87	12,262	2.7	0.2	3.0
Fine Arts	20,966	1,800	19,166	4.6	4.5	4.6
NSE	27,017	20,525	6,492	5.9	51.1	1.6
Engineering	23,215	17,899	5,316	5.1	44.6	1.3
Agriculture	3,802	2,626	1,176	0.8	6.5	0.3
HWE	224,129	3,857	220,272	49.2	9.6	53.0
Health/Medicine	25,483	3,113	22,370	5.6	7.7	5.4
Home Science	114,540	252	114,288	25.1	0.6	27.5
Education	78,588	447	78,141	17.2	1.1	18.8
Others	5,518	45	5,473	1.3	0.2	1.3

Source: School Fundamental Survey 1989, Table 41.

Appendix Table A-7

Enrollment by Field of Study — Special Training Schools, 1989

	N. of Students			% Shares		
	Total	Male	Female	Total	Male	Female
All Fields	559,046	260,508	298,538	100.0	100.0	100.0
Industry	158,441	133,132	25,309	28.3	51.1	8.5
Agriculture	1,266	1,050	216	0.3	0.4	0.1
Health	116,327	21,146	95,181	20.8	8.1	31.8
Nutrition/Cosmetology	34,164	13,415	20,749	6.1	5.1	7.0
Education /Social Work	22,388	3,380	19,008	4.0	1.3	6.4
Business	100,505	44,666	55,839	18.0	17.2	18.7
Commerce	2,183	1,221	962	0.4	0.5	0.3
Accounting	34,158	20,263	13,895	6.1	7.8	4.7
Typing	623	14	609	0.1	0.0	0.2
Secretary	14,514	188	14,326	2.6	0.1	4.8
Management	7,138	4,937	2,201	1.3	1.9	0.7
Others	41,889	18,043	23,846	7.5	6.9	8.0
Home Science	46,466	5,262	41,204	8.3	2.0	13.8
Culture	79,489	38,457	41,032	14.2	14.8	13.7
Music	5,350	3,454	1,896	1.0	1.3	0.6
Fine Arts	3,819	1,951	1,868	0.7	0.7	0.6
Graphic Design	25,326	14,231	11,095	4.5	5.5	3.7
Tea/Flower Arrangement	150	13	137	0.0	0.0	0.0
Foreign Language	17,036	4,302	12,734	3.0	1.7	4.3
Drama/Cinema	4,769	3,390	1,379	0.9	1.3	0.5
Photography	2,255	1,757	498	0.4	0.7	0.2
Translator	5,590	730	4,860	1.0	0.3	1.6
Others	15,194	8,629	6,565	2.7	3.3	2.2

Source: School Fundamental Survey 1989, Table 189.
Note: Post-Secondary Level of STS only.

Appendix Table A-8

Number of Graduates by Detailed Field of Study
Special Training Schools, 1989

	Total	Male	Female
Total	230,835	101,185	129,650
Engineering/Technology	59,091	49,285	9,806
Civil Eng./Construction/Survey	9,099	8,132	967
Electrics/Electronics	6,790	6,648	142
Wireless/Communication	2,249	2,194	55
Automobile Mechanics	5,755	5,721	34
Mechanics	1,482	1,469	13
Computer	4,502	3,347	1,155
Information Processing	24,141	17,786	6,355
Others	5,073	3,988	1,085
Agriculture	322	279	43
Health-Related	42,059	7,064	34,995
Nursing	23,942	637	23,305
Dentist's Aid/Technician	8,047	1,957	6,090
Medical Test/Radiation	2,694	1,345	1,349
Massage	2,535	2,046	489
Others	4,841	1,079	3,762
Nutrition/Cosmetology	27,419	11,856	15,563
Nutrition/Cooking	15,466	8,059	7,407
Beautician/Barber	10,804	3,141	7,663
Others	1,149	656	493
Education/Social Work	8,573	817	7,756
Preschool	4,050	156	3,894
School	2,595	196	2,399
Others	1,928	465	1,463
Business	40,493	16,324	24,169
Accounting/Book Keeping	16,007	8,730	7,277
Typing/Secretary	6,219	108	6,111
Management/Others	18,267	7,486	10,781
Household	24,142	2,501	21,641
Home Science	408	-	408
Garment	20,293	1,607	18,686
Cooking/Craft/Others	3,441	894	2,547
Culture	28,736	13,059	15,677
Music	1,453	901	552
Art	1,303	573	730
Graphic Design	9,223	5,072	4,151
Foreign Language/Translation	8,342	1,271	7,071
Drama/Movie/Photography	2,815	2,210	605
Others	5,600	3,032	2,568

Source: School Fundamental Survey 1989, Vol I, Table 194.
Note: Post-Secondary courses only.

Appendix Table A-9

Changes in Enrollment in 4-Year Institutions by Departments

	Total	HSS					NSE					HWE				
		(Total)	Humanities	Social Sciences	Liberal Arts & Related	Fine/ Performing Arts	(Total)	Natural Sciences	Engineering	Agriculture	Merchandise Marine	(Total)	Health Related	Home Science	Education	Physical Exercise
1960	601,464	367,485	92,505	247,319	18,336	9,325	138,247	16,206	92,572	28,040	1,429	95,732	28,317	8,203	55,416	3,796
1961	644,022	393,844	99,673	264,551	19,419	10,201	152,795	17,535	104,528	29,277	1,455	97,383	29,399	8,830	55,216	3,938
1962	699,200	427,106	107,429	287,284	21,241	11,152	171,430	19,114	119,590	31,213	1,513	100,664	30,328	9,987	55,686	4,663
1963	762,749	463,757	116,943	316,161	18,040	12,613	195,784	21,537	139,425	33,286	1,536	103,208	31,832	10,805	55,255	5,316
1964	817,751	495,390	125,640	336,874	19,116	13,760	215,374	23,863	155,096	34,855	1,560	106,987	33,328	12,104	55,672	5,883
1965	895,465	542,081	138,722	367,016	20,584	15,759	240,180	27,220	174,655	36,721	1,584	113,204	35,613	13,758	56,881	6,952
1966	992,496	606,287	159,741	405,132	23,236	18,178	264,096	29,987	193,970	38,532	1,607	122,113	38,056	16,470	58,769	8,818
1967	1,103,886	673,270	182,746	443,897	25,062	21,565	297,603	33,267	220,499	42,215	1,622	133,013	41,788	19,226	61,377	10,622
1968	1,211,068	729,329	160,957	511,614	31,588	25,170	328,280	38,414	242,816	45,398	1,652	153,459	46,418	21,324	85,717	-
1969	1,295,771	774,551	171,867	543,037	31,267	28,380	358,413	39,957	268,437	48,361	1,658	162,807	49,658	23,069	90,080	-
1970	1,344,358	798,919	170,907	562,162	36,128	29,722	377,249	42,071	283,674	49,853	1,651	168,190	52,279	23,292	92,619	-
1971	1,404,186	829,651	177,661	582,380	37,584	32,026	398,394	43,061	301,089	52,609	1,635	176,141	55,303	23,932	96,906	-
1972	1,459,548	871,342	188,621	612,197	36,434	34,090	406,395	43,549	308,326	52,816	1,704	181,811	57,435	24,402	99,974	-
1973	1,523,074	909,404	199,225	634,835	39,232	36,112	420,995	46,527	317,606	55,099	1,763	192,675	60,488	25,692	106,495	-
1974	1,585,674	946,240	206,394	660,276	41,601	37,969	434,529	49,532	326,121	57,048	1,828	204,905	64,946	27,081	112,878	-
1975	1,652,003	965,872	215,933	688,667	22,308	38,964	445,041	50,225	333,959	58,996	1,861	241,090	92,523	29,081	119,486	-
1976	1,702,235	994,175	223,462	707,314	22,811	40,588	453,060	51,543	339,713	59,922	1,882	255,000	98,253	30,488	126,259	-
1977	1,747,057	1,020,202	230,923	723,996	22,577	42,706	460,978	53,005	345,680	60,431	1,862	265,877	103,380	31,308	131,189	-
1978	1,769,331	1,031,955	235,720	729,506	22,931	43,798	464,537	54,525	347,988	60,146	1,878	272,839	107,543	31,996	133,298	-
1979	1,754,343	1,021,022	239,359	716,171	21,346	44,146	457,791	54,578	341,790	59,569	1,854	275,530	109,748	31,851	133,931	-
1980	1,741,504	1,010,806	239,990	704,737	21,921	44,158	453,499	54,579	337,767	59,558	1,595	277,199	112,058	31,930	133,211	-
1981	1,725,814	997,750	239,624	692,268	21,747	44,111	449,714	55,033	334,009	59,149	1,523	278,350	113,100	31,667	133,583	-
1982	1,716,956	988,159	239,486	681,046	23,444	44,183	449,163	55,188	333,387	59,072	1,516	279,634	114,457	31,453	133,724	-
1983	1,729,632	990,526	243,684	680,141	22,043	44,658	457,691	57,597	338,990	59,562	1,542	281,415	115,861	31,844	133,710	-
1984	1,734,080	988,132	245,489	675,501	22,009	45,133	462,218	58,446	342,456	59,777	1,539	283,730	117,071	31,948	134,711	-
1985	1,734,392	984,287	246,850	671,001	21,546	44,890	464,884	59,678	343,590	60,068	1,548	285,221	117,809	32,185	135,227	-
1986	1,758,635	998,564	253,010	678,842	21,514	45,198	472,229	60,306	349,579	60,792	1,552	287,842	118,456	32,893	136,493	-
1987	1,806,021	1,032,729	262,287	700,750	24,163	45,529	482,584	61,076	358,490	61,417	1,601	290,711	118,948	33,749	138,014	-
1988	1,861,306	1,074,934	274,098	728,380	26,643	45,813	494,423	61,932	368,207	62,649	1,635	291,949	118,438	34,552	138,959	-
1989	1,929,137	1,126,002	290,387	759,636	28,974	47,005	510,064	63,997	379,405	64,975	1,687	293,071	117,712	35,794	139,565	-

Source: RIHE Higher Education Databook.

Appendix Table A-10

Changes in Enrollment in 2-Year Institutions by Departments

	Total	HSS					NSE				HWE				
		(Total)	Humanities	Social Sciences	Liberal Arts	Fine/ Performing Arts	(Total)	Natural Sciences	Engineering	Agriculture	(Total)	Health Related	Home Science	Education	Physical Exercise
1960	81,528	33,928	16,141	14,622	-	3,165	10,752	199	9,200	1,353	36,848	465	30,508	4,419	1,456
1961	91,245	38,142	18,328	16,334	-	3,480	12,247	120	10,635	1,492	40,856	471	34,094	4,764	1,527
1962	105,182	43,742	20,844	18,791	-	4,107	14,140	132	12,419	1,589	47,300	479	39,521	5,698	1,602
1963	119,767	48,879	23,586	21,271	-	4,022	15,509	154	13,646	1,709	55,379	474	46,369	6,842	1,694
1964	125,566	51,445	25,347	21,895	-	4,203	16,085	160	14,203	1,722	58,036	446	48,162	7,770	1,658
1965	145,458	58,139	31,675	22,093	-	4,371	16,992	195	14,887	1,910	70,327	494	56,759	11,276	1,798
1966	192,083	72,477	42,613	24,174	-	5,690	19,990	604	17,013	2,373	99,616	553	77,428	19,351	2,284
1967	231,779	84,615	51,140	25,571	-	7,904	23,653	1,271	19,566	2,816	123,511	788	91,199	28,872	2,652
1968	251,637	91,938	46,669	29,628	4,747	10,894	24,875	152	21,380	3,343	134,824	4,743	91,600	38,481	-
1969	259,329	96,400	49,613	29,997	4,682	12,108	25,734	189	22,123	3,422	137,195	5,496	89,806	41,893	-
1970	259,747	98,994	51,475	30,187	4,646	12,686	25,496	194	21,799	3,503	135,257	5,827	85,017	44,413	-
1971	271,573	106,280	56,288	31,773	4,731	13,488	26,283	171	22,585	3,527	139,010	6,265	84,536	48,209	-
1972	284,165	111,785	59,671	32,323	5,089	14,702	25,875	187	22,266	3,422	146,505	6,767	85,365	54,373	-
1973	305,782	119,928	64,410	33,975	5,544	15,999	28,001	166	24,108	3,727	157,853	7,386	88,188	62,279	-
1974	326,163	128,153	69,393	35,801	5,838	17,121	27,630	151	23,429	4,050	170,380	8,043	92,513	69,824	-
1975	348,922	135,848	73,645	37,915	6,421	17,867	27,675	167	23,335	4,173	185,399	10,023	97,369	78,007	-
1976	360,026	137,208	74,848	37,828	6,674	17,858	27,316	160	22,802	4,354	195,502	11,614	98,440	85,448	-
1977	369,397	139,795	76,892	37,205	6,905	18,703	26,520	177	21,859	4,484	203,082	13,214	99,797	90,071	-
1978	375,666	141,629	79,102	35,615	7,167	19,745	26,883	187	22,242	4,454	207,154	14,494	101,457	91,203	-
1979	369,449	140,329	79,026	34,552	6,990	19,761	25,680	170	21,150	4,360	203,440	15,102	99,087	89,251	-
1980	366,248	138,746	79,008	33,499	7,044	19,195	24,409	156	20,093	4,160	203,093	15,829	97,894	89,370	-
1981	367,462	139,641	79,581	33,585	7,106	19,369	23,674	179	19,449	4,046	204,147	16,788	98,625	88,734	-
1982	369,365	141,313	79,970	33,975	7,719	19,649	23,591	224	19,410	3,957	204,461	18,086	99,320	87,055	-
1983	374,535	144,938	81,507	35,036	8,836	19,559	24,681	271	20,298	4,112	204,916	18,893	100,912	85,111	-
1984	377,107	149,245	83,642	36,379	10,064	19,160	24,362	291	19,961	4,110	203,500	20,072	100,558	82,870	-
1985	366,180	149,670	85,056	35,990	10,617	18,007	24,170	277	19,787	4,106	192,340	20,544	95,617	76,179	-
1986	391,078	165,630	91,857	40,186	12,201	18,386	25,121	288	20,719	4,114	200,327	21,546	102,073	76,708	-
1987	432,393	189,940	108,056	47,180	14,849	19,855	27,177	319	22,674	4,184	215,276	22,934	112,126	80,216	-
1988	444,808	200,557	112,524	51,704	16,070	20,259	27,748	331	23,412	4,005	216,503	24,129	113,500	78,874	-
1989	455,696	209,737	115,746	55,489	17,536	20,966	27,348	331	23,215	3,802	218,611	25,483	114,540	78,588	-

Source: RIHE Higher Education Databook.

Appendix Table A-11

Changes in Female Share(%) by Fields of Study — 4-Year Institutions

	Total	HSS								NSE					HNE			
		(Total)	Humanities	Social Sciences				Liberal Arts & Related	Fine/ Performing Arts	(Total)	Natural Sciences	Engineering	Agriculture	Merchandise Marine	(Total)	Health Related	Home Science	Education
				(Total)	Law	Economics	Sociology											
1960	13.7	9.9	32.0	1.4	2.2	0.8	7.2	-	54.3	1.8	11.1	0.3	1.0	0.0	36.7	26.7	99.1	31.5
1961	14.5	10.2	34.8	1.4	2.1	0.8	7.7	-	55.4	1.9	11.7	0.4	1.0	0.0	40.8	27.5	99.6	37.8
1962	14.4	10.2	36.0	1.3	2.0	1.0	2.6	-	55.0	1.9	11.4	0.4	1.5	0.0	42.2	27.7	99.3	39.9
1963	14.9	11.2	39.0	1.4	2.2	1.0	4.1	-	59.2	2.1	13.1	0.5	1.6	0.0	44.2	28.1	99.4	41.6
1964	15.8	12.5	42.6	1.6	2.6	1.2	2.6	-	57.3	2.3	13.4	0.5	2.5	0.0	47.3	31.7	99.6	45.1
1965	16.2	13.4	45.9	1.9	2.7	1.4	4.9	-	59.5	2.1	12.1	0.4	2.3	0.0	49.2	32.5	99.8	47.0
1966	16.7	14.2	48.5	2.0	3.1	1.5	3.2	-	61.3	2.3	13.1	0.4	2.9	0.0	51.1	33.1	99.9	49.0
1967	17.0	14.7	49.0	2.2	3.5	1.7	6.0	-	65.6	2.3	13.7	0.4	2.9	0.0	52.8	34.8	99.7	50.7
1968	17.1	14.0	52.9	3.3	3.0	1.4	21.9	67.9	58.9	2.2	12.7	0.4	3.0	0.0	52.2	38.3	99.9	49.6
1969	18.7	16.2	57.7	4.0	3.7	1.9	25.3	70.5	66.7	2.4	13.9	0.4	3.7	0.0	54.5	38.1	99.6	51.0
1970	20.2	17.7	58.9	4.7	4.3	2.3	31.2	73.6	70.2	2.7	14.3	0.5	5.4	0.0	57.4	40.6	99.8	52.2
1971	19.5	17.2	56.9	4.9	4.8	2.4	28.1	71.1	65.9	2.9	15.5	0.6	5.3	0.0	56.1	38.9	99.7	51.9
1972	19.4	17.1	56.4	5.1	4.5	2.5	29.1	54.0	64.6	3.1	15.5	0.7	5.8	0.0	56.0	39.3	99.7	52.0
1973	19.3	17.1	55.6	5.3	5.3	2.6	28.8	58.1	63.3	2.9	14.8	0.7	6.3	0.0	56.3	39.2	99.7	53.4
1974	19.8	17.7	57.2	5.8	5.4	3.0	30.3	49.6	61.9	3.1	14.1	0.7	7.2	0.0	56.4	38.2	99.5	54.5
1975	21.6	19.7	60.3	6.9	6.8	3.7	33.3	52.6	61.9	3.5	15.1	0.9	8.5	0.0	58.9	40.9	99.5	58.1
1976	22.7	21.2	62.7	7.7	7.3	4.2	34.4	57.9	62.5	3.6	15.7	0.8	9.2	0.0	59.7	40.8	99.5	60.0
1977	23.7	22.3	64.4	8.4	7.7	4.9	36.4	54.9	62.1	3.8	16.0	0.9	9.5	0.0	60.0	40.6	99.6	61.3
1978	24.1	22.6	61.7	8.8	8.3	5.2	36.4	49.9	62.9	3.9	15.7	1.0	9.9	0.0	60.3	40.1	99.7	62.1
1979	24.5	23.2	65.1	9.1	8.0	5.8	35.8	52.3	65.2	3.9	15.9	1.0	9.6	0.0	59.3	38.2	99.7	60.7
1980	24.7	23.3	64.5	9.1	8.0	6.1	34.3	51.3	65.8	4.3	17.2	1.2	10.2	0.0	58.9	38.7	99.6	59.9
1981	24.7	23.4	64.2	9.3	8.0	6.2	34.5	48.3	66.5	4.6	17.7	1.3	11.1	0.0	57.9	38.1	99.5	57.8
1982	24.2	22.7	62.6	8.8	8.1	5.5	33.4	45.6	66.7	4.7	16.7	1.5	11.5	0.0	56.4	37.3	99.5	54.9
1983	24.4	22.9	61.8	8.9	8.8	5.5	33.0	44.8	66.6	5.1	17.6	1.6	12.2	0.0	55.3	36.8	99.4	53.3
1984	24.6	23.2	61.8	9.0	8.8	5.6	33.5	43.4	66.8	5.7	17.5	2.1	13.6	1.6	54.8	35.9	99.2	53.0
1985	24.7	23.1	61.5	9.1	9.5	5.4	33.0	44.4	67.6	6.2	18.9	2.3	14.4	0.6	55.2	36.6	99.2	53.2
1986	24.9	23.4	61.7	9.1	9.5	5.4	33.7	45.0	67.0	6.7	20.0	2.7	15.3	3.8	55.1	37.2	99.4	52.4
1987	25.9	24.7	63.2	9.9	10.9	6.0	32.6	46.2	67.9	7.0	19.8	3.1	15.9	3.7	56.5	38.8	99.2	54.3

Appendix Table A-12

Changes in Enrollment — Special Training School, Both Sexes

(in Persons)

	Total	Engineering	Agriculture	Health Related	Nutrition/ Cosmetology	Education	Business	Home Science	Culture
1976	90,619	12,449	23	15,510	2,392	5,332	6,198	45,278	3,437
1977	268,990	45,384	331	58,934	14,467	18,862	17,845	88,740	24,427
1978	310,800	53,138	388	73,996	19,803	22,503	22,481	88,689	29,802
1979	321,379	56,620	386	80,652	21,713	20,209	27,703	79,928	34,168
1980	337,864	62,718	382	86,654	23,816	19,295	34,742	69,694	40,563
1981	356,479	66,598	417	94,848	29,072	19,725	39,242	64,839	41,738
1982	361,937	72,363	441	97,968	27,773	18,142	43,364	58,920	42,966
1983	385,911	85,635	432	102,102	30,331	16,917	49,264	55,416	45,814
1984	404,153	92,295	428	104,979	30,129	16,640	55,253	52,631	51,798
1985	398,821	92,141	431	105,353	29,382	15,229	56,039	49,233	51,013
1986	434,489	103,767	494	110,877	33,026	16,302	62,236	49,282	58,505
1987	483,220	124,496	515	113,349	36,498	17,522	75,970	48,631	66,239
1988	521,574	142,353	815	114,901	36,545	18,506	88,460	47,877	72,117

Sources: School Fundamental Survey 1987, Table 187, and each Table of each year's Survey.
Quick Report of the 1988 School Fundamental Survey, Table 23(2).

Note: Number of students as of in May, each year.

Appendix Table A-13

Changes in Number of Graduates — 4-Year Institutions, Both Sexes

	Total	HSS					NSE					HWE				
		(Total)	Humanities	Social Sciences	Liberal Arts & Related	Fine/ Performing Arts	(Total)	Natural Sciences	Engineering	Agriculture	Merchandise Marine	(Total)	Health Related	Home Science	Education	Physical Exercise
1960	119,809	70,326	18,929	49,471	-	1,926	25,820	3,184	16,312	6,064	260	23,663	6,853	1,840	14,025	945
1961	121,979	71,207	18,269	50,885	-	2,053	27,717	3,402	17,839	6,198	278	23,055	6,895	1,866	13,475	819
1962	128,153	74,091	18,428	53,374	-	2,292	31,221	3,472	21,014	6,477	258	22,838	6,908	1,886	13,221	823
1963	138,479	80,687	20,333	57,860	-	2,494	34,499	3,927	23,623	6,676	273	23,293	7,080	2,154	13,085	974
1964	149,384	87,417	22,561	62,118	-	2,738	38,483	4,200	26,995	7,032	256	23,484	7,309	2,363	12,823	989
1965	162,349	96,007	24,400	68,757	-	2,850	42,596	4,748	30,121	7,450	277	23,746	7,355	2,611	12,657	1,123
1966	178,279	105,121	26,782	74,980	-	3,359	48,087	5,389	33,956	8,458	284	25,071	7,834	2,985	12,962	1,290
1967	187,418	110,664	28,683	78,573	-	3,408	51,517	5,569	37,263	8,400	285	25,237	7,902	3,003	12,826	1,506
1968	194,628	114,128	23,673	86,560	165	3,730	52,708	6,033	38,352	8,047	276	27,792	8,388	3,140	16,264	-
1969	217,805	127,931	27,720	95,627	315	4,269	59,022	6,838	43,414	8,478	292	30,852	9,353	3,970	17,529	-
1970	240,921	141,456	32,266	103,657	398	5,135	65,071	7,209	48,481	9,072	309	34,394	10,141	5,260	18,993	-
1971	272,949	160,407	35,955	117,926	419	6,107	75,228	7,935	55,850	11,135	308	37,314	11,313	5,470	20,531	-
1972	292,946	172,657	38,237	127,113	515	6,792	80,939	9,084	59,698	11,884	273	39,350	12,431	5,775	21,144	-
1973	297,166	174,320	38,743	128,422	475	6,680	83,274	8,764	62,961	11,283	266	39,572	12,628	5,625	21,319	-
1974	300,135	175,319	38,718	129,055	470	7,076	84,223	9,053	62,953	11,950	267	40,593	12,781	5,781	22,031	-
1975	313,072	183,293	41,507	133,458	494	7,834	86,992	9,504	65,422	11,757	309	42,787	12,898	6,050	23,839	-
1976	326,167	191,307	44,363	138,100	594	8,250	89,569	10,012	67,036	12,213	308	45,291	14,063	6,349	24,879	-
1977	339,819	198,138	46,703	141,977	707	8,751	92,918	10,234	69,221	13,104	359	48,763	15,289	6,712	26,762	-
1978	356,981	208,818	48,766	150,119	770	9,163	95,813	10,688	71,167	13,636	322	52,350	16,618	7,166	28,566	-
1979	374,887	219,054	52,111	156,489	956	9,498	99,632	11,077	74,128	14,075	352	56,201	18,161	7,591	30,449	-
1980	378,666	221,359	53,455	156,944	1,043	9,917	99,507	11,554	73,508	13,861	584	57,800	18,478	7,562	31,760	-
1981	386,057	224,945	54,387	158,997	1,297	10,264	101,654	11,803	75,188	14,260	403	59,458	19,797	7,844	31,817	-
1982	382,466	224,129	54,608	158,048	1,238	10,235	99,275	11,755	73,593	13,599	328	59,062	19,651	7,889	31,522	-
1983	369,069	215,306	52,968	150,591	1,608	10,139	94,922	11,723	69,620	13,267	312	58,841	19,986	7,630	31,225	-
1984	372,247	216,131	54,207	150,270	1,547	10,107	96,723	12,234	70,486	13,699	304	59,393	20,408	7,666	31,319	-
1985	373,302	215,572	54,018	149,715	1,623	10,216	97,855	12,698	71,396	13,449	312	59,875	20,546	7,607	31,722	-
1986	376,260	216,257	54,674	149,729	1,543	10,311	99,964	12,814	73,316	13,518	316	60,039	20,673	7,786	31,580	-
1987	382,655	218,080	56,196	149,589	1,683	10,613	103,420	13,389	75,843	13,867	321	61,155	21,399	7,970	31,786	-
1988	382,828	217,802	56,178	149,383	1,767	10,474	103,244	13,388	76,362	13,161	333	61,782	21,723	7,914	32,145	-
1989	376,688	213,491	55,917	145,784	1,711	10,079	102,189	13,295	75,678	12,886	330	61,008	21,339	7,681	31,988	-

Appendix Table A-14

Changes in Number of Graduates — 4-Year Institutions, Male

	Total	HSS					NSE					HWE				
		(Total)	Humanities	Social Sciences	Liberal Arts & Related	Fine/ Performing Arts	(Total)	Natural Sciences	Engineering	Agriculture	Merchandise Marine	(Total)	Health Related	Home Science	Education	Physical Exercise
1960	103,361	62,522	12,871	48,771	-	880	25,357	2,832	16,262	6,003	260	15,482	4,991	16	9,606	869
1961	104,280	63,009	11,917	50,177	-	915	27,185	3,004	17,768	6,135	278	14,086	4,966	8	8,376	736
1962	109,759	65,497	11,787	52,679	-	1,031	30,642	3,076	20,928	6,380	258	13,620	4,954	13	7,951	702
1963	117,827	70,477	12,409	57,050	-	1,018	33,771	3,414	23,512	6,572	273	13,579	5,056	12	7,648	863
1964	125,717	75,232	12,943	61,120	-	1,169	37,611	3,639	26,858	6,858	256	12,874	4,958	10	7,044	862
1965	136,084	81,812	13,205	67,453	-	1,154	41,715	4,174	29,989	7,275	277	12,557	4,932	6	6,710	909
1966	148,461	88,610	13,804	73,506	-	1,300	46,992	4,683	33,816	8,209	284	12,859	5,225	2	6,612	1,020
1967	155,650	92,647	14,629	76,845	-	1,173	50,352	4,806	37,108	8,153	285	12,651	5,142	8	6,324	1,177
1968	161,350	96,437	11,145	83,705	53	1,534	51,536	5,265	38,189	7,806	276	13,377	5,178	4	8,195	-
1969	177,005	105,012	11,714	91,784	93	1,421	57,508	5,887	43,252	8,167	292	14,395	5,789	14	8,592	-
1970	192,152	113,718	13,264	98,818	105	1,531	63,309	6,178	48,236	8,586	309	15,125	6,027	13	9,085	-
1971	219,743	129,873	15,484	112,187	121	2,081	73,083	6,704	55,522	10,549	308	16,787	6,907	14	9,866	-
1972	236,047	139,879	16,659	120,577	237	2,406	78,446	7,675	59,307	11,191	273	17,722	7,551	17	10,154	-
1973	239,923	141,462	17,207	121,603	199	2,453	80,833	7,465	62,526	10,576	266	17,628	7,680	17	9,931	-
1974	240,673	141,093	16,562	121,601	237	2,693	81,637	7,779	62,496	11,095	267	17,943	7,902	27	10,014	-
1975	245,532	143,903	16,461	124,224	234	2,984	84,000	8,072	64,859	10,760	309	17,629	7,618	28	9,983	-
1976	252,021	147,404	16,552	127,507	250	3,095	86,321	8,438	66,485	11,090	308	18,296	8,321	29	9,946	-
1977	259,280	150,388	16,644	130,112	319	3,313	89,410	8,598	68,598	11,855	359	19,482	9,082	30	10,370	-
1978	270,850	157,973	17,216	136,972	386	3,399	92,069	9,009	70,451	12,287	322	20,808	9,955	24	10,829	-
1979	283,227	164,258	18,189	142,306	456	3,307	95,760	9,311	73,372	12,725	352	23,209	11,223	22	11,964	-
1980	284,968	165,601	18,979	142,723	508	3,391	95,264	9,569	72,658	12,453	584	24,103	11,327	28	12,748	-
1981	290,514	167,818	19,447	144,264	671	3,436	96,981	9,714	74,186	12,678	403	25,715	12,247	38	13,430	-
1982	289,886	168,688	20,422	144,180	673	3,413	94,608	9,794	72,454	12,032	328	26,590	12,323	37	14,230	-
1983	278,972	161,616	20,213	137,130	887	3,386	90,101	9,662	68,483	11,644	312	27,255	12,638	48	14,569	-
1984	280,795	161,683	20,689	136,761	875	3,358	91,231	10,099	68,997	11,836	299	27,881	13,091	58	14,732	-
1985	280,935	161,153	20,775	136,162	903	3,313	91,848	10,299	69,721	11,518	310	27,934	13,033	62	14,839	-
1986	282,581	161,203	20,918	136,031	848	3,406	93,325	10,250	71,315	11,456	304	28,053	12,974	46	15,033	-
1987	283,615	159,708	20,656	134,744	906	3,402	96,235	10,743	73,519	11,664	309	27,672	13,090	62	14,520	-
1988	282,557	157,984	20,326	133,293	1,001	3,364	96,263	10,772	73,952	11,225	314	28,310	13,305	45	14,960	-
1989	276,048	153,624	19,574	129,707	1,007	3,336	95,153	10,722	73,185	10,924	322	27,271	12,835	52	14,384	-

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Appendix Table A-15

Changes in Number of Graduates — 4-Year Institutions, Female

	Total	HSS					NSE					HNE				
		(Total)	Humanities	Social Sciences	Liberal Arts & Related	Fine/Performing Arts	(Total)	Natural Sciences	Engineering	Agriculture	Merchandise Marine	(Total)	Health Related	Home Science	Education	Physical Exercise
1960	16,448	7,804	6,058	700	-	1,046	463	352	50	61	0	8,181	1,862	1,824	4,419	76
1961	17,699	8,198	6,352	708	-	1,138	532	398	71	63	0	8,969	1,929	1,858	5,099	83
1962	18,394	8,597	6,641	695	-	1,261	579	396	86	97	0	9,218	1,954	1,873	5,270	121
1963	20,652	10,210	7,924	810	-	1,476	728	513	111	104	0	9,714	2,024	2,142	5,437	111
1964	23,667	12,185	9,618	998	-	1,569	872	561	137	174	0	10,610	2,351	2,353	5,779	127
1965	26,265	14,195	11,195	1,304	-	1,696	881	574	132	175	0	11,189	2,423	2,605	5,947	214
1966	29,818	16,511	12,978	1,474	-	2,059	1,095	706	140	249	0	12,212	2,609	2,983	6,350	270
1967	31,768	18,017	14,054	1,728	-	2,235	1,165	763	155	247	0	12,586	2,760	2,995	6,502	329
1968	33,278	17,691	12,528	2,855	112	2,196	1,172	768	163	241	0	14,415	3,210	3,136	8,069	-
1969	40,800	22,919	16,006	3,843	222	2,848	1,424	951	162	311	0	16,457	3,564	3,956	8,937	-
1970	48,769	27,738	19,002	4,839	293	3,604	1,762	1,031	245	486	0	19,269	4,114	5,247	9,908	-
1971	53,206	30,534	20,471	5,739	298	4,026	2,145	1,231	328	586	0	20,527	4,406	5,456	10,665	-
1972	56,899	32,778	21,578	6,536	278	4,386	2,493	1,409	391	693	0	21,628	4,880	5,758	10,990	-
1973	57,243	32,858	21,536	6,819	276	4,227	2,441	1,299	435	707	0	21,944	4,948	5,608	11,388	-
1974	59,462	34,226	22,156	7,454	233	4,383	2,586	1,274	457	855	0	22,650	4,879	5,754	12,017	-
1975	67,540	39,390	25,046	9,234	260	4,850	2,992	1,432	563	997	0	25,158	5,280	6,022	13,856	-
1976	74,146	43,903	27,811	10,593	344	5,155	3,248	1,574	551	1,123	0	26,995	5,742	6,320	14,933	-
1977	80,539	47,750	30,059	11,865	388	5,438	3,508	1,636	623	1,249	0	29,281	6,207	6,682	16,392	-
1978	86,131	50,845	31,550	13,147	384	5,764	3,744	1,679	716	1,349	0	31,542	6,663	7,142	17,737	-
1979	91,660	54,796	33,922	14,183	500	6,191	3,872	1,766	756	1,350	0	32,992	6,938	7,569	18,485	-
1980	93,698	55,758	34,476	14,221	535	6,526	4,243	1,985	850	1,408	0	33,697	7,151	7,534	19,012	-
1981	95,543	57,127	34,940	14,733	626	6,828	4,673	2,089	1,002	1,582	0	33,743	7,550	7,806	18,387	-
1982	92,580	55,441	34,186	13,868	565	6,822	4,667	1,961	1,139	1,567	0	32,472	7,328	7,852	17,292	-
1983	90,097	53,690	32,755	13,461	721	6,753	4,821	2,061	1,137	1,623	0	31,586	7,348	7,582	16,656	-
1984	91,452	54,448	33,518	13,509	672	6,749	5,492	2,135	1,489	1,863	5	31,512	7,317	7,608	16,587	-
1985	92,367	54,419	33,243	13,553	720	6,903	6,007	2,399	1,675	1,931	2	31,941	7,513	7,545	16,883	-
1986	93,679	55,054	33,756	13,698	695	6,905	6,639	2,564	2,001	2,062	12	31,986	7,699	7,740	16,547	-
1987	99,040	58,372	35,539	14,845	777	7,211	7,185	2,646	2,324	2,203	12	33,483	8,309	7,908	17,266	-
1988	100,271	59,818	35,852	16,090	766	7,110	6,981	2,616	2,410	1,936	19	33,472	8,418	7,869	17,185	-
1989	100,640	59,867	36,343	16,077	704	6,743	7,036	2,573	2,493	1,962	8	33,737	8,504	7,629	17,604	-

Appendix Table A-16

Changes in Number of Graduates — 2-Year Institutions, Both Sexes

	Total	HSS (Total)	Humanities	Social Sciences	Liberal Arts	Fine/ Performing Arts	NSE (Total)	Natural Sciences	Engineering	Agriculture	HWE (Total)	Health Related	Home Science	Education Training	Physical Exercise
1960	30,401	12,183	5,826	5,394	-	963	3,262	58	2,631	573	14,956	142	12,320	1,758	736
1961	32,893	13,280	6,413	5,524	-	1,343	3,359	76	2,747	536	16,254	146	13,353	2,038	717
1962	38,348	15,111	7,958	5,507	-	1,646	4,137	60	3,478	599	19,100	146	16,134	2,137	683
1963	42,761	16,962	8,952	6,220	-	1,790	4,852	58	4,108	686	20,947	160	17,658	2,362	767
1964	50,985	19,865	10,408	7,634	-	1,823	5,829	74	4,957	798	25,301	148	21,345	3,033	775
1965	55,728	21,410	11,448	8,163	-	1,799	5,882	79	5,083	720	28,436	145	23,882	3,559	850
1966	55,371	21,927	12,263	7,775	-	1,889	5,890	79	5,179	632	27,554	167	22,614	4,032	741
1967	74,695	28,038	17,228	8,565	-	2,245	6,417	103	5,414	900	40,240	118	32,471	6,686	965
1968	100,166	37,179	19,720	11,269	2,339	3,851	7,665	75	6,459	1,131	55,322	1,222	41,055	13,045	-
1969	111,091	39,800	20,973	11,829	2,186	4,812	8,739	73	7,385	1,281	62,552	1,890	43,497	17,165	-
1970	114,803	41,579	22,327	11,421	2,229	5,602	8,150	78	6,596	1,476	65,074	2,208	43,544	19,322	-
1971	117,512	43,642	23,839	11,841	2,223	5,739	9,597	107	7,964	1,526	64,273	2,546	41,507	20,220	-
1972	118,390	45,948	24,854	12,859	2,224	6,011	9,093	79	7,483	1,531	63,349	2,615	39,182	21,552	-
1973	125,593	49,300	27,623	13,073	2,163	6,441	9,733	90	8,235	1,408	66,560	2,759	40,348	23,453	-
1974	130,786	51,366	28,519	13,254	2,592	7,001	9,171	94	7,741	1,336	70,249	2,983	40,539	26,727	-
1975	140,938	55,475	31,611	13,715	2,583	7,566	9,515	68	7,816	1,631	75,948	3,032	43,016	29,900	-
1976	150,863	59,780	33,825	14,971	2,887	8,097	8,911	82	7,182	1,647	82,172	3,217	44,956	33,999	-
1977	160,044	61,763	35,379	14,917	3,238	8,229	9,436	81	7,554	1,801	88,845	4,029	47,107	37,709	-
1978	162,626	61,492	35,307	14,835	3,152	8,198	9,026	74	7,119	1,833	92,108	4,718	46,531	40,859	-
1979	170,816	64,996	37,561	14,740	3,558	9,137	8,890	99	6,932	1,859	96,930	5,037	48,774	43,119	-
1980	169,930	65,077	37,661	14,812	3,343	9,261	9,144	83	7,080	1,981	95,709	5,473	48,445	41,791	-
1981	166,743	64,389	37,912	14,106	3,335	9,036	8,618	81	6,678	1,859	93,736	5,684	46,848	41,204	-
1982	167,170	64,140	37,733	14,129	3,395	8,883	8,080	71	6,222	1,787	94,950	5,880	47,208	41,862	-
1983	168,535	64,781	38,089	13,868	3,449	9,375	8,059	104	6,234	1,721	95,695	6,301	47,579	41,815	-
1984	170,041	66,088	38,721	14,220	3,995	9,152	8,359	115	6,516	1,728	95,594	6,769	47,942	40,883	-
1985	174,624	68,911	39,732	15,480	4,528	9,171	8,870	149	7,002	1,719	96,843	7,069	49,132	40,642	-
1986	171,845	69,694	40,563	15,219	5,283	8,629	8,959	138	6,967	1,854	93,192	7,139	47,917	38,136	-
1987	164,399	69,416	41,109	15,340	5,004	7,963	8,895	130	7,006	1,759	86,088	7,216	44,647	34,225	-
1988	196,110	85,749	50,186	19,508	6,812	9,243	10,008	153	7,937	1,918	100,353	7,801	53,956	38,596	-
1989	205,098	93,799	54,573	22,211	7,613	9,402	11,061	160	9,051	1,850	100,238	8,129	54,766	37,343	-

Appendix Table A-17

Changes in Number of Graduates — 2-Year Institutions, Male

	Total	HSS					NSE				HWE				
		(Total)	Humanities	Social Sciences	Liberal Arts	Fine/ Performing Arts	(Total)	Natural Sciences	Engineering	Agriculture	(Total)	Health Related	Home Science	Education Training	Physical Exercise
1960	9,360	6,127	1,131	4,751	-	245	3,100	-	2,597	503	133	-	9	117	7
1961	9,094	5,825	897	4,748	-	180	3,167	-	2,707	460	102	-	14	88	-
1962	9,787	5,795	1,012	4,579	-	204	3,951	-	3,409	542	41	-	15	26	-
1963	10,928	6,321	1,104	4,999	-	218	4,567	-	3,990	577	40	-	17	23	-
1964	12,816	7,291	1,097	5,994	-	200	5,479	-	4,817	662	46	-	15	31	-
1965	13,315	7,700	1,029	6,435	-	236	5,575	-	4,967	608	40	-	19	21	-
1966	12,924	7,285	997	6,056	-	232	5,563	-	5,014	549	76	-	35	41	-
1967	13,754	7,702	1,281	6,228	-	193	5,963	30	5,172	761	89	-	43	46	-
1968	15,605	8,106	1,185	6,604	57	260	7,149	3	6,193	953	350	135	104	111	-
1969	16,196	7,614	764	6,495	39	316	8,189	5	7,098	1,086	393	193	62	138	-
1970	15,285	7,132	696	6,000	27	409	7,608	8	6,345	1,255	545	257	180	108	-
1971	16,861	7,340	722	6,158	12	448	9,034	13	7,701	1,320	487	306	86	95	-
1972	16,404	7,378	653	6,275	8	442	8,513	5	7,167	1,341	513	221	215	77	-
1973	16,765	7,199	645	6,035	16	503	9,105	10	7,963	1,132	461	233	92	136	-
1974	15,573	6,633	561	5,541	14	517	8,596	8	7,473	1,115	344	209	79	56	-
1975	15,865	6,556	515	5,476	32	533	8,888	8	7,516	1,364	421	221	93	107	-
1976	15,780	7,093	522	5,993	25	553	8,256	3	6,877	1,376	431	257	85	89	-
1977	15,808	6,715	582	5,595	41	497	8,627	2	7,129	1,496	466	245	75	146	-
1978	15,193	6,289	563	5,142	28	556	8,142	4	6,672	1,466	762	307	97	358	-
1979	14,628	6,128	548	4,798	65	717	7,863	14	6,362	1,487	637	397	73	167	-
1980	14,730	5,952	624	4,713	63	552	8,073	8	6,499	1,566	705	376	70	259	-
1981	13,882	5,509	613	4,335	70	491	7,524	9	6,024	1,491	849	561	48	240	-
1982	12,777	5,026	614	3,864	64	484	6,869	9	5,409	1,451	882	585	60	237	-
1983	12,235	4,700	607	3,547	72	474	6,620	6	5,214	1,400	915	596	39	280	-
1984	12,321	4,751	513	3,630	80	528	6,687	3	5,334	1,350	883	577	41	265	-
1985	12,568	4,714	535	3,608	58	513	6,950	7	5,592	1,351	904	610	32	262	-
1986	12,726	4,687	602	3,490	87	508	7,066	9	5,628	1,429	973	647	67	259	-
1987	12,549	4,635	614	3,435	58	528	6,916	11	5,615	1,290	998	737	66	195	-
1988	13,631	5,050	648	3,696	61	645	7,485	19	6,085	1,381	1,096	854	63	179	-
1989	14,512	5,187	650	3,777	51	709	8,222	20	6,879	1,323	1,103	869	68	166	-

Appendix Table A-18

Changes in Number of Graduates — 2-Year Institutions, Female

	Total	HSS					NSE				HWE				
		(Total)	Humanities	Social Sciences	Liberal Arts	Fine/ Performing Arts	(Total)	Natural Sciences	Engineering	Agriculture	(Total)	Health Related	Home Science	Education Tra'ning	Physical Exercise
1960	21,041	6,056	4,695	643	-	718	162	58	34	70	14,823	142	12,311	1,641	729
1961	23,799	7,455	5,516	776	-	1,163	192	76	40	76	16,152	146	13,339	1,950	717
1962	28,561	9,316	6,946	928	-	1,442	186	60	69	57	19,059	146	16,119	2,111	683
1963	31,833	10,641	7,848	1,221	-	1,572	285	58	118	109	20,907	160	17,641	2,339	767
1964	38,179	12,574	9,311	1,640	-	1,623	350	74	140	136	25,255	148	21,330	3,002	775
1965	42,413	13,710	10,419	1,728	-	1,563	307	79	116	112	28,396	145	23,863	3,538	850
1966	42,447	14,642	11,266	1,719	-	1,657	327	79	165	83	27,478	167	22,579	3,991	741
1967	60,941	20,336	15,947	2,337	-	2,052	454	73	242	139	40,151	118	32,428	6,640	965
1968	84,561	29,073	18,535	4,665	2,282	3,591	516	72	266	178	54,972	1,087	40,951	12,934	-
1969	94,895	32,186	20,209	5,334	2,147	4,496	550	68	287	195	62,159	1,697	43,435	17,027	-
1970	99,518	34,447	21,631	5,421	2,202	5,193	542	70	251	221	64,529	1,951	43,364	19,214	-
1971	100,651	36,302	23,117	5,683	2,211	5,291	563	94	263	206	63,786	2,240	41,421	20,125	-
1972	101,986	38,570	24,201	6,584	2,216	5,569	580	74	316	190	62,836	2,394	38,967	21,475	-
1973	108,828	42,101	26,978	7,038	2,147	5,938	628	80	272	276	66,099	2,526	40,256	23,317	-
1974	115,213	44,733	27,958	7,713	2,578	6,484	575	86	268	221	69,905	2,774	40,460	26,671	-
1975	125,073	48,919	31,096	8,239	2,551	7,033	627	60	300	267	75,527	2,811	42,923	29,793	-
1976	135,083	52,687	33,303	8,978	2,862	7,544	655	79	305	271	81,741	2,960	44,871	33,910	-
1977	144,236	55,048	34,797	9,322	3,197	7,732	809	79	425	305	88,379	3,784	47,032	37,563	-
1978	147,433	55,203	34,744	9,693	3,124	7,642	884	70	447	367	91,346	4,411	46,434	40,501	-
1979	156,188	58,868	37,013	9,942	3,493	8,420	1,027	85	570	372	96,293	4,640	48,701	42,952	-
1980	155,200	59,125	37,037	10,099	3,280	8,709	1,071	75	581	415	95,004	5,097	48,375	41,532	-
1981	152,861	58,880	37,299	9,771	3,265	8,545	1,094	72	654	368	92,887	5,123	46,800	40,964	-
1982	154,393	59,114	37,119	10,265	3,331	8,399	1,211	62	813	336	94,068	5,295	47,148	41,625	-
1983	156,300	60,081	37,482	10,321	3,377	8,901	1,439	98	1,020	321	94,780	5,705	47,540	41,535	-
1984	157,720	61,337	38,208	10,590	3,915	8,624	1,672	112	1,182	378	94,711	6,192	47,901	40,618	-
1985	162,056	64,197	39,197	11,872	4,470	8,658	1,920	142	1,410	368	95,939	6,459	49,100	40,380	-
1986	159,119	65,007	39,961	11,729	5,196	8,121	1,893	129	1,339	425	92,219	6,492	47,850	37,877	-
1987	151,850	64,781	40,495	11,905	4,946	7,435	1,979	119	1,391	469	85,090	6,479	44,581	34,030	-
1988	182,479	80,699	49,538	15,812	6,751	8,598	2,523	134	1,852	537	99,257	6,947	53,893	38,417	-
1989	190,586	88,612	53,923	18,434	7,562	8,693	2,839	140	2,172	527	99,135	7,260	54,698	37,177	-

Appendix Table A-19

Changes in Number of Graduates from Special Training School

(in Persons)

	Total	Engineering	Agriculture	Health Related	Nutrition/ Cosmetology	Education	Business	Home Science	Culture
	Both Sexes								
1976	66,381	7,783	102	11,331	2,493	3,218	6,501	32,459	2,044
1977	131,039	18,218	221	21,909	12,467	8,790	11,832	48,161	9,441
1978	146,805	22,717	256	26,844	14,261	10,026	14,146	46,153	12,402
1979	154,010	24,517	257	29,047	15,620	9,595	18,621	42,299	14,054
1980	159,716	27,248	263	31,448	18,261	9,142	20,266	38,192	14,896
1981	165,759	28,781	282	33,434	22,139	9,105	22,506	33,078	16,434
1982	167,411	31,285	289	34,262	21,533	8,339	23,402	30,936	17,365
1983	173,324	34,593	294	35,585	23,244	7,725	25,940	28,234	17,709
1984	183,553	41,029	282	36,929	23,251	7,527	27,988	27,273	19,274
1985	184,322	42,719	304	38,237	21,857	7,017	27,678	24,860	21,650
1986	186,836	42,245	314	38,706	25,157	6,566	29,925	22,437	21,486
	Male								
1976	13,687	7,208	51	1,681	1,104	25	2,347	142	1,129
1977	34,984	16,644	209	4,431	4,824	255	3,845	715	4,061
1978	42,745	20,690	225	5,643	5,183	135	4,751	880	5,238
1979	48,375	22,539	228	6,278	5,744	152	6,968	763	5,703
1980	53,691	24,831	240	7,050	7,003	161	7,579	748	6,079
1981	58,509	25,779	263	7,538	9,085	150	8,440	707	6,547
1982	60,249	27,458	267	7,173	8,965	179	8,339	918	6,950
1983	64,759	29,446	259	7,245	9,554	245	9,222	1,107	7,681
1984	71,810	34,276	252	7,190	9,775	347	10,056	1,550	8,364
1985	74,258	35,795	266	6,989	9,112	318	10,572	1,883	9,323
1986	77,225	35,824	284	6,877	11,151	491	11,805	1,378	9,415
	Female								
1976	52,694	575	51	9,650	1,839	3,193	4,154	32,317	915
1977	96,055	1,574	12	17,478	7,643	8,535	7,987	47,446	5,380
1978	104,060	2,027	31	21,201	9,078	9,891	9,395	45,273	7,164
1979	105,635	1,978	29	22,769	9,876	9,443	11,653	41,536	8,351
1980	106,025	2,417	23	24,398	11,258	8,981	12,687	37,444	8,817
1981	107,250	3,002	19	25,896	13,054	8,955	14,066	32,371	9,887
1982	107,162	3,827	22	27,089	12,568	8,160	15,063	30,018	10,415
1983	108,565	5,147	35	28,340	13,690	7,480	16,718	27,127	10,028
1984	111,743	6,753	30	29,739	13,476	7,180	17,932	25,723	10,910
1985	110,064	6,924	38	31,248	12,745	6,699	17,106	22,977	12,327
1986	109,611	6,421	30	31,829	14,006	6,075	18,120	21,059	12,071

Sources: School Fundamental Survey 1987, Table 192, and each Table of each year's Survey.

Appendix Table B-1

Employment Status of Graduates by Field of Study — Male, 4-Year Institutions, 1989

	N. of Graduates	Male Distribution over Employment Status (%)				
		Total	Further Education	Employed	Temporary Work	Not Employed/ Unknown
All Fields	276,048	100.0	10.0	80.1	0.6	9.3
Humanities	19,574	100.0	5.4	71.9	1.2	21.5
Social Sciences	129,707	100.0	0.8	88.4	0.4	10.4
Fine Arts/Performing Arts	3,336	100.0	8.9	64.0	4.6	22.5
Natural Sciences	10,722	100.0	25.6	67.4	0.4	6.6
Engineering	73,185	100.0	16.7	80.7	0.0	2.6
Agriculture	10,924	100.0	15.3	77.8	0.6	6.3
Merchandise-Marine	322	100.0	36.6	62.1	0.0	1.3
Health-Related	12,835	100.0	59.4	27.2	0.2	13.2
Home Science	52	100.0	1.9	88.5	0.0	9.6
Education	14,384	100.0	4.9	73.7	4.9	16.5
Others	1,007	100.0	6.9	85.0	0.8	7.3

Appendix Table B-2

Employment Status of Graduates by Field of Study — Female, 4-Year Institutions, 1989

	N. of Graduates	Female Distribution over Employment Status (%)				
		Total	Further Education	Employed	Temporary Work	Not Employed/ Unknown
All Fields	100,640	100.0	4.8	78.4	2.2	14.6
Humanities	36,343	100.0	2.3	81.0	1.4	15.3
Social Sciences	16,077	100.0	1.8	82.3	1.4	14.5
Fine Arts/Performing Arts	6,743	100.0	5.7	68.8	4.8	20.7
Natural Sciences	2,573	100.0	14.7	78.9	0.6	5.8
Engineering	2,493	100.0	11.4	85.4	0.2	3.0
Agriculture	1,962	100.0	8.7	83.0	0.5	7.8
Merchandise-Marine	8	100.0	87.5	12.5	0.0	0.0
Health-Related	8,504	100.0	20.1	65.2	0.4	14.3
Home Science	7,629	100.0	2.0	85.9	1.5	10.6
Education	17,604	100.0	3.1	75.1	5.4	16.4
Others	704	100.0	3.1	76.6	2.4	17.9

Appendix Table B-3

Employment Status of Graduates by Field of Study — 2-Year Institutions, 1989

	N. of Graduates	Distribution over Employment Status (%)				
		Total	Further Education	Employed	Temporary Work	Not Employed/ Unknown
All Fields	205,098	100.0	3.1	85.0	1.4	10.5
Humanities	54,573	100.0	2.3	85.9	1.4	10.4
Social Sciences	22,211	100.0	3.9	84.0	1.3	10.8
Liberal Arts	5,279	100.0	3.7	83.4	0.7	12.2
Fine Arts/Performing Arts	9,402	100.0	14.5	64.5	2.4	18.6
Engineering	9,051	100.0	6.8	82.3	1.4	9.5
Agriculture	1,850	100.0	13.6	71.9	1.7	12.8
Health-Related	8,129	100.0	8.0	82.2	1.1	8.7
Home Science	54,766	100.0	1.3	86.9	0.9	10.9
Education	37,343	100.0	1.5	88.2	1.8	8.5
Others	2,494	100.0	0.4	93.6	0.7	5.3

Appendix Table B-4

Employment Status of STS Graduates

(%)

	Employed and Self-Employed	Studying	Employed and Enrolled	Helping House-hold	Unemployed	Others
Engineering	96.5	0.8	2.4	-	-	0.3
Agriculture	87.7	2.8	1.0	1.0	0.9	6.6
Health-Related	88.6	7.3	0.5	0.2	0.9	2.5
Nutrition/ Cosmetology	87.5	1.2	6.0	1.7	0.7	2.9
Education/ Social Services	92.1	1.6	1.1	0.8	1.0	3.4
Business	95.2	1.1	1.7	1.0	-	1.0
Home Science	57.9	20.6	8.3	4.6	2.4	6.2
Culture/ Liberal Arts	81.9	6.6	4.5	2.1	0.8	4.1

Source: Survey on Special Training Schools 1990, Table 44, page 39.

Appendix Table B-5

Changes in Employment Status of Graduates
- 4-Year Institutions, Male, All Departments -

	Total	Graduate School	Employed	Temporary Work/ Unknown	Total	Graduate School	Employed	Temporary Work/ Unknown
	Number (in persons)				Shares (%)			
1960	103,361	3,801	91,961	7,599	100.0	3.7	88.9	7.4
1961	104,280	3,448	94,960	5,872	100.0	3.3	91.1	5.6
1962	109,759	3,904	100,816	5,039	100.0	3.6	91.8	4.6
1963	117,827	5,080	107,296	5,451	100.0	4.3	91.1	4.6
1964	125,717	5,737	113,661	6,319	100.0	4.6	90.4	5.0
1965	136,084	7,283	120,543	8,258	100.0	5.4	88.5	6.1
1966	148,461	9,751	126,554	12,156	100.0	6.6	85.2	8.2
1967	155,650	9,793	133,636	12,221	100.0	6.3	85.8	7.9
1968	161,350	9,424	140,017	11,909	100.0	5.8	86.8	7.4
1969	177,005	10,657	148,114	18,234	100.0	6.0	83.7	10.3
1970	192,152	11,527	160,105	20,520	100.0	6.0	83.3	10.7
1971	219,743	11,218	184,508	24,017	100.0	5.1	84.0	10.9
1972	236,047	12,761	191,047	32,239	100.0	5.4	80.9	13.7
1973	239,923	12,840	191,642	35,441	100.0	5.4	79.8	14.8
1974	240,673	12,494	195,004	33,175	100.0	5.2	81.0	13.8
1975	245,532	13,890	192,414	39,228	100.0	5.7	78.3	16.0
1976	252,021	15,093	190,226	46,702	100.0	6.0	75.5	18.5
1977	259,280	14,622	199,953	44,705	100.0	5.7	77.1	17.2
1978	270,850	14,258	208,700	47,892	100.0	5.3	77.0	17.7
1979	283,227	14,385	222,292	46,550	100.0	5.1	78.5	16.4
1980	284,968	14,780	228,105	42,083	100.0	5.2	80.0	14.8
1981	290,514	15,421	234,428	40,665	100.0	5.3	80.7	14.0
1982	289,886	16,868	234,060	38,958	100.0	5.9	80.7	13.4
1983	278,972	17,183	224,453	37,336	100.0	6.2	80.4	13.4
1984	280,795	18,486	226,743	35,566	100.0	6.6	80.7	12.7
1985	280,935	19,287	227,371	34,277	100.0	6.9	80.9	12.2
1986	282,581	20,183	228,729	33,669	100.0	7.2	80.9	11.9
1987	283,615	21,231	227,887	34,497	100.0	7.5	80.3	12.2
1988	282,557	21,532	228,394	32,631	100.0	7.7	80.8	11.5
1989	276,048	21,730	226,775	27,543	100.0	7.9	82.1	10.0

Appendix Table B-6

Changes in Employment Status of Graduates
- 4-Year Institutions, Female, All Departments -

	Total	Graduate School	Employed	Temporary Work/ Unknown	Total	Graduate School	Employed	Temporary Work/ Unknown
	Number (in persons)				Shares (%)			
1960	16,448	725	10,778	4,945	100.0	4.4	65.3	30.1
1961	17,699	705	12,449	4,545	100.0	4.0	70.3	25.7
1962	18,394	560	13,036	4,798	100.0	3.0	70.9	26.1
1963	20,652	636	14,799	5,217	100.0	3.1	71.6	25.3
1964	23,667	670	17,029	5,968	100.0	2.8	72.0	25.2
1965	26,265	741	17,773	7,751	100.0	2.8	67.7	29.5
1966	29,818	922	18,716	10,180	100.0	3.1	62.8	34.1
1967	31,768	1,055	19,990	10,723	100.0	3.3	62.9	33.8
1968	33,278	1,031	21,579	10,668	100.0	3.1	64.8	32.1
1969	40,800	1,170	25,175	14,455	100.0	2.9	61.7	35.4
1970	48,769	1,012	29,387	18,370	100.0	2.1	60.2	37.7
1971	53,206	1,099	32,531	19,576	100.0	2.1	61.1	36.8
1972	56,899	1,226	33,287	22,386	100.0	2.2	58.5	39.3
1973	57,243	1,288	34,837	21,118	100.0	2.3	60.8	36.9
1974	59,462	1,265	38,305	19,892	100.0	2.1	64.4	33.5
1975	67,540	1,475	42,768	23,297	100.0	2.2	63.3	34.5
1976	74,146	1,589	43,000	29,557	100.0	2.1	58.0	39.9
1977	80,539	1,792	48,199	30,548	100.0	2.3	59.8	37.9
1978	86,131	1,937	52,333	31,861	100.0	2.2	60.8	37.0
1979	91,660	1,991	58,269	31,400	100.0	2.2	63.5	34.3
1980	93,698	2,035	62,247	29,416	100.0	2.2	66.4	31.4
1981	95,543	2,178	65,349	28,016	100.0	2.3	68.4	29.3
1982	92,580	2,351	64,756	25,473	100.0	2.6	69.9	27.5
1983	90,097	2,396	63,297	24,404	100.0	2.7	70.2	27.1
1984	91,452	2,580	65,558	23,314	100.0	2.8	71.7	25.5
1985	92,367	2,769	67,821	21,777	100.0	3.0	73.4	23.6
1986	93,679	3,139	69,805	20,735	100.0	3.4	74.5	22.1
1987	99,040	3,384	74,102	21,554	100.0	3.4	74.8	21.8
1988	100,271	3,281	76,626	20,364	100.0	3.3	76.4	20.3
1989	100,640	3,479	80,292	16,869	100.0	3.5	79.7	16.8

Appendix Table B-7

Changes in Employment Status of Graduates
- 2-Year Institutions, Both Sexes, All Departments -

	Total	Graduate School	Employed	Temporary Work/ Unknown	Total	Graduate School	Employed	Temporary Work/ Unknown
	Number (in persons)				Shares (%)			
1960	30,401	2,600	17,544	10,257	100.0	8.6	57.7	33.7
1961	32,893	2,350	20,233	10,310	100.0	7.2	61.5	31.3
1962	38,348	3,211	22,344	12,793	100.0	8.4	58.2	33.4
1963	42,761	3,758	25,796	13,207	100.0	8.8	60.3	30.9
1964	50,995	3,956	32,286	14,753	100.0	7.8	63.3	28.9
1965	55,728	4,269	34,575	16,884	100.0	7.7	62.0	30.3
1966	55,371	3,373	33,322	18,676	100.0	6.1	60.2	33.7
1967	74,695	4,041	44,745	25,909	100.0	5.4	59.9	34.7
1968	100,166	4,163	63,074	32,929	100.0	4.2	62.9	32.9
1969	111,091	4,847	75,115	31,129	100.0	4.4	67.6	28.0
1970	114,803	4,376	80,189	30,238	100.0	3.9	69.8	26.3
1971	117,512	5,553	82,283	29,676	100.0	4.7	70.0	25.3
1972	118,390	5,460	82,116	30,814	100.0	4.6	69.4	26.0
1973	125,593	5,195	91,233	29,165	100.0	4.2	72.6	23.2
1974	130,786	5,075	98,482	27,229	100.0	3.9	75.3	20.8
1975	140,938	5,279	103,057	32,602	100.0	3.8	73.1	23.1
1976	150,863	5,902	103,882	41,079	100.0	3.9	68.9	27.2
1977	160,044	5,418	113,945	40,681	100.0	3.4	71.2	25.4
1978	162,626	5,333	114,860	42,433	100.0	3.3	70.6	26.1
1979	170,816	5,258	123,143	42,415	100.0	3.1	72.1	24.8
1980	169,930	5,393	128,941	35,596	100.0	3.2	75.9	20.9
1981	166,743	5,398	129,732	31,613	100.0	3.2	77.8	19.0
1982	167,170	5,183	129,846	32,141	100.0	3.1	77.7	19.2
1983	168,535	4,940	131,469	32,126	100.0	2.9	78.0	19.1
1984	170,041	4,819	134,328	30,894	100.0	2.8	79.0	18.2
1985	174,624	5,201	140,754	28,669	100.0	3.0	80.6	16.4
1986	171,845	5,461	139,532	26,852	100.0	3.2	81.2	15.6
1987	164,399	5,393	133,151	25,855	100.0	3.3	81.0	15.7
1988	196,110	6,046	160,718	29,346	100.0	3.1	81.9	15.0
1989	205,098	6,535	174,354	24,209	100.0	3.2	85.0	11.8

Appendix Table B-8

Direct Advancement/Employment Rate by Field of Study
- 4-Year Institutions, Male -

(%)

	All Fields	Humanities	Social Science	Fine/ Performing Arts	Natural Sciences	Engineering	Agriculture	Merchandise Marine	Health-Related	Home Science	Education	Others
1960	89.8	85.1	92.5	86.8	97.0	98.0	93.0	98.5	96.2	93.8	91.4	-
1961	91.7	89.4	93.7	85.6	97.1	98.1	94.9	98.9	96.2	100.0	95.9	-
1962	92.8	88.2	95.2	91.5	97.4	98.3	96.7	99.6	97.7	100.0	97.0	-
1963	93.0	87.7	95.2	89.6	97.7	97.9	96.3	98.5	97.6	91.7	98.3	-
1964	92.8	90.0	93.8	93.4	97.3	98.4	94.4	100.0	98.0	100.0	98.4	-
1965	91.9	87.2	92.9	91.7	96.4	98.2	91.7	98.2	97.3	100.0	96.3	-
1966	90.0	81.9	91.1	89.0	93.9	97.5	88.0	98.9	93.5	100.0	93.4	-
1967	90.5	81.3	91.8	82.2	93.0	97.0	90.8	97.9	94.9	75.0	93.8	-
1968	91.1	81.9	92.1	86.0	92.7	97.6	92.3	98.6	96.9	75.0	88.3	92.5
1969	89.0	77.2	89.7	78.6	90.7	96.3	90.2	99.7	69.4	92.9	86.9	84.9
1970	88.5	76.0	88.9	63.0	89.0	96.6	90.5	99.0	76.3	84.6	86.7	83.8
1971	88.2	75.8	88.0	74.3	85.8	97.0	90.7	98.1	81.0	92.9	84.7	71.1
1972	85.3	71.7	85.1	66.2	83.9	95.1	89.1	98.2	80.9	100.0	81.4	81.4
1973	84.3	70.1	84.0	65.7	81.4	93.6	87.4	92.1	82.2	94.1	82.1	80.4
1974	85.2	69.7	84.9	68.6	86.5	94.6	88.7	96.3	79.1	96.3	84.2	88.2
1975	83.1	67.4	82.9	54.2	84.6	93.1	82.0	96.4	77.4	92.9	82.2	86.3
1976	80.4	65.0	80.2	56.1	80.2	90.7	80.4	91.2	77.5	75.9	76.9	87.6
1977	81.5	66.2	81.2	59.7	80.6	92.4	81.8	91.1	81.8	86.7	75.9	89.3
1978	80.9	67.4	80.3	56.6	80.7	92.3	79.8	92.5	83.2	66.7	77.3	93.5
1979	82.1	68.3	81.7	62.0	80.5	93.7	82.0	89.8	83.8	90.9	76.6	91.2
1980	83.6	69.2	83.9	65.5	82.9	94.4	88.6	96.4	85.0	85.7	75.0	91.1
1981	84.3	69.8	85.1	66.4	83.6	94.8	88.5	96.3	84.8	76.3	75.4	89.7
1982	84.9	70.0	85.9	65.4	83.5	96.0	89.7	97.9	83.5	91.9	75.5	92.3
1983	84.8	72.4	86.0	67.7	85.7	95.7	88.8	99.7	85.3	85.4	73.3	89.2
1984	85.2	74.8	86.8	65.8	86.5	96.0	89.2	99.7	87.5	79.3	72.7	86.6
1985	85.7	74.9	87.0	66.4	88.1	96.9	89.2	99.0	87.6	71.0	74.0	91.3
1986	86.0	74.4	87.7	68.7	89.2	96.6	89.8	99.3	86.5	71.7	74.1	90.9
1987	85.7	73.3	86.8	67.3	90.0	96.7	90.5	99.7	87.8	80.6	74.5	88.2
1988	86.4	75.0	87.7	68.5	91.4	97.1	91.3	97.8	85.7	91.1	72.6	89.7
1989	87.9	77.3	89.2	72.9	93.1	97.5	93.2	98.8	86.6	90.4	78.6	91.9

Note: Proportion of those who entered graduate courses or went to permanent employment directly after graduation.

Appendix Table B-9

Direct Advancement/Employment Rate by Field of Study
- 4-Year Institutions, Female -

(%)

	All Fields	Humanities	Social Sciences	Fine/ Performing Arts	Natural Sciences	Engineering	Agriculture	Merchandise Marine	Health-Related	Home Science	Education	Others
1960	68.3	58.5	60.3	62.0	92.3	96.0	80.3	98.5	80.7	58.2	86.8	-
1961	72.9	61.7	63.3	64.9	93.0	95.8	90.5	98.9	85.0	64.0	91.1	-
1962	72.8	62.8	64.0	60.6	92.9	93.0	93.8	99.6	80.8	63.0	91.2	-
1963	73.6	61.7	66.3	64.3	93.2	97.3	95.2	98.5	85.8	65.5	94.4	-
1964	73.8	63.2	62.6	70.6	91.1	94.9	90.2	100.0	87.5	63.3	93.9	-
1965	69.5	58.0	57.2	70.5	91.3	93.9	82.3	98.2	87.5	60.4	90.7	-
1966	64.9	51.7	46.2	66.9	88.8	94.3	77.1	98.9	87.7	58.2	89.0	-
1967	65.2	53.8	45.7	67.6	90.6	91.0	84.6	97.9	84.7	55.4	89.9	-
1968	67.1	55.7	57.1	68.1	87.9	84.7	81.7	98.6	85.5	56.5	85.8	47.3
1969	64.3	51.6	58.3	61.1	86.3	84.0	80.7	99.7	81.0	56.7	85.9	45.0
1970	61.9	51.4	57.7	45.3	86.8	88.6	76.3	99.0	82.7	56.2	83.1	42.3
1971	62.8	52.1	57.3	54.1	86.1	84.8	83.3	98.1	82.8	58.4	81.6	43.0
1972	60.0	49.4	51.3	53.7	81.5	89.0	73.4	98.2	78.4	58.5	80.2	48.6
1973	62.5	54.2	54.7	56.4	81.4	85.5	74.3	92.1	75.7	61.6	79.4	50.0
1974	66.0	59.7	56.2	54.1	84.4	87.7	78.8	96.3	77.9	66.4	82.1	61.4
1975	65.0	57.9	59.3	55.9	80.7	84.7	72.6	96.4	77.2	63.9	80.3	49.2
1976	59.7	51.1	54.5	53.3	74.9	81.9	70.0	91.2	73.3	58.9	76.0	47.1
1977	61.5	54.8	57.8	54.7	76.2	84.8	75.0	91.1	71.8	62.4	74.2	49.0
1978	62.4	57.1	58.7	53.5	76.0	85.6	67.5	92.5	71.3	61.7	75.0	48.2
1979	65.1	59.9	62.4	56.4	76.6	83.7	75.0	89.8	73.2	65.6	77.4	50.0
1980	67.8	63.7	66.4	61.0	80.5	89.1	79.5	96.4	77.8	69.9	75.3	51.2
1981	69.9	67.2	68.2	63.5	82.5	87.4	84.7	96.3	77.4	73.2	75.0	61.7
1982	71.7	69.5	70.4	63.6	84.8	92.9	86.5	97.9	79.9	75.6	74.8	71.9
1983	72.0	70.5	73.0	64.6	85.5	90.9	83.9	99.7	80.3	75.8	72.8	67.3
1984	73.5	73.4	74.4	65.6	86.7	91.9	86.4	80.0	82.3	76.6	71.7	70.4
1985	75.4	75.9	77.0	65.9	89.2	94.6	87.0	100.0	81.3	80.2	72.8	71.0
1986	76.7	77.8	78.3	67.1	90.3	95.6	90.0	100.0	80.7	81.4	73.9	72.9
1987	77.0	77.3	79.1	69.0	91.0	95.0	89.9	100.0	83.1	82.1	73.5	73.9
1988	78.5	79.4	81.0	71.8	92.6	96.2	90.2	100.0	83.4	84.0	73.2	77.7
1989	81.9	83.3	84.2	74.5	93.7	96.9	91.7	100.0	85.4	88.0	78.2	79.7

Note: Proportion of those who entered graduate courses or went to permanent employment directly after graduation.

Appendix Table B-10

Direct Advancement/Employment Rate by Field of Study
- 2-Year Institutions, Female -

(%)

	All Fields	Humanities	Social Sciences	Fine/ Performing Arts	Natural Sciences	Engineer- ing	Agricul- ture	Merchandise Marine	Health- Related	Home Science	Education	Others
1960	54.1	56.3	71.5	63.8	-	97.1	68.6	45.0	80.3	84.1	71.6	-
1961	58.4	59.3	79.9	80.3	-	100.0	75.0	50.1	87.0	86.6	62.3	-
1962	56.7	58.2	76.6	93.3	-	95.7	86.0	49.1	83.6	86.6	56.7	-
1963	59.8	61.7	74.2	70.7	-	94.1	81.7	52.2	87.5	88.0	61.9	-
1964	63.1	67.0	68.8	83.8	-	94.3	77.9	55.0	93.2	87.0	78.3	-
1965	61.4	62.8	74.9	92.4	-	94.0	80.4	53.6	93.1	89.7	69.2	-
1966	57.7	54.6	77.3	77.2	-	82.4	80.7	50.0	93.4	89.1	64.9	-
1967	58.9	59.8	68.6	83.6	-	87.2	64.7	50.1	78.8	87.9	66.2	-
1968	62.4	61.9	73.3	91.7	60.2	91.7	84.8	53.3	85.8	86.6	57.4	52.7
1969	68.2	65.3	74.7	89.7	67.5	82.2	79.5	60.3	91.5	88.3	64.2	55.0
1970	71.3	68.6	73.9	95.7	64.3	88.4	90.5	65.2	92.8	88.5	60.0	57.7
1971	72.0	68.4	78.5	91.5	61.2	84.0	80.6	66.6	88.8	86.7	63.4	57.0
1972	72.0	68.5	76.5	94.6	60.2	80.7	77.4	65.1	88.3	88.4	64.5	51.4
1973	75.8	73.5	77.8	95.0	68.1	77.9	81.9	70.7	91.0	88.0	67.1	50.0
1974	78.2	76.0	77.3	93.0	72.6	84.3	86.0	73.5	90.6	89.7	66.3	38.6
1975	75.6	73.6	76.5	98.3	70.9	87.0	81.3	70.2	89.3	87.4	62.6	50.8
1976	71.5	67.8	71.8	86.1	62.3	81.3	74.2	66.5	86.2	82.9	63.3	52.9
1977	73.5	73.0	76.7	100.0	68.3	78.4	78.7	68.9	82.7	80.2	64.7	51.0
1978	73.1	71.4	74.7	90.0	68.2	70.9	81.7	69.5	87.2	78.8	64.0	51.8
1979	74.5	74.1	78.8	90.6	73.0	83.2	72.6	71.6	88.3	77.0	67.3	50.0
1980	78.7	79.8	82.2	92.0	79.6	84.7	83.6	77.3	89.7	79.0	69.2	48.8
1981	80.8	82.6	83.7	95.8	80.4	85.9	82.1	79.5	89.8	80.7	70.6	38.3
1982	80.4	81.2	82.7	100.0	82.0	88.2	82.4	79.4	86.8	80.6	72.0	28.1
1983	80.6	81.4	82.8	99.0	80.6	85.1	81.3	79.6	88.0	81.4	71.7	32.7
1984	81.6	83.2	85.7	92.2	82.9	89.3	77.0	80.4	85.1	82.0	70.8	29.6
1985	83.5	84.8	86.1	92.7	83.5	90.6	81.5	82.7	84.6	84.0	73.9	29.0
1986	84.6	85.4	87.2	92.7	84.2	90.7	80.2	83.5	87.4	85.4	74.9	27.1
1987	84.7	85.0	86.6	92.5	82.4	89.1	81.9	83.5	89.1	86.8	73.5	26.1
1988	85.4	85.5	87.0	92.6	84.7	91.5	81.2	84.6	88.8	86.6	75.9	22.3
1989	88.6	88.7	90.3	93.9	87.3	92.4	85.2	88.2	90.1	89.8	79.5	20.3

Note: Proportion of those who entered graduate courses or went to permanent employment directly after graduation.

Appendix Table C-1

Employed Graduates by Industry — 4-Year Institutions, Both Sexes, All Departments

	Total N. of Graduates	N. of Employed Graduates									% Distribution						
		Primary & Secondary Sector			Tertiary Sector												
		Total	Manufacturing	Others	Total	Trade	Bank/ Insurance	Services/ Transport	Government	Others	Total	Primary & Secondary Sector	Trade	Bank/ Insurance	Services/ Transport	Government	Others
1960	99,706	38,466	32,727	5,739	61,240	14,257	10,305	28,262	5,261	3,155	100.0	38.6	14.3	10.3	28.3	5.3	3.2
1961	104,464	42,033	36,243	5,790	62,431	15,521	12,128	27,272	4,619	2,891	100.0	40.2	14.9	11.6	26.1	4.4	2.8
1962	110,991	48,722	42,033	6,689	62,269	15,424	11,182	27,778	5,390	2,495	100.0	43.9	13.9	10.1	25.0	4.9	2.2
1963	119,331	50,081	42,900	7,181	69,250	17,345	11,076	31,277	6,337	3,215	100.0	42.0	14.5	9.3	26.2	5.3	2.7
1964	127,812	53,400	45,631	7,769	74,412	20,123	11,028	33,448	6,484	3,329	100.0	41.8	15.7	8.6	26.2	5.1	2.6
1965	135,419	57,542	48,831	8,711	77,877	20,868	10,965	35,418	6,775	3,851	100.0	42.5	15.4	8.1	26.2	5.0	2.8
1966	142,386	53,570	44,347	9,223	88,816	24,484	12,287	38,044	9,181	4,820	100.0	37.6	17.2	8.6	26.7	6.4	3.4
1967	150,871	59,795	49,189	10,606	91,076	26,350	11,036	38,281	9,596	5,813	100.0	39.6	17.5	7.3	25.4	6.4	3.9
1968	158,957	63,464	52,612	10,852	95,493	28,921	10,862	39,017	8,803	7,890	100.0	39.9	18.2	6.8	24.5	5.5	5.0
1969	172,125	69,020	57,131	11,889	103,105	33,767	12,263	40,571	8,767	7,737	100.0	40.1	19.6	7.1	23.6	5.1	4.5
1970	188,227	85,656	72,789	12,867	102,579	32,228	16,162	42,083	10,866	1,240	100.0	45.5	17.1	8.6	22.4	5.8	0.7
1971	215,595	97,247	78,576	18,671	118,348	34,082	21,188	47,207	14,711	1,160	100.0	45.1	15.8	9.8	21.9	6.8	0.5
1972	217,308	91,270	68,910	22,360	126,038	35,010	24,174	47,406	16,902	2,546	100.0	42.0	16.1	11.1	21.8	7.8	1.2
1973	223,889	89,564	66,396	23,168	134,325	32,199	27,134	51,465	20,266	3,261	100.0	40.0	14.4	12.1	23.0	9.1	1.5
1974	230,687	87,401	65,115	22,286	143,286	35,537	28,698	51,473	23,566	4,012	100.0	37.9	15.4	12.4	22.3	10.2	1.7
1975	232,683	81,226	62,400	18,826	151,457	40,732	29,259	56,693	22,045	2,728	100.0	34.9	17.5	12.6	24.4	9.5	1.2
1976	230,463	79,718	60,798	18,920	150,745	34,560	33,782	58,402	18,992	5,009	100.0	34.6	15.0	14.7	25.3	8.2	2.2
1977	241,617	86,116	67,883	18,233	158,501	37,089	32,940	60,403	23,883	4,186	100.0	35.2	15.2	13.5	24.7	9.8	1.7
1978	256,817	85,411	66,089	19,322	171,406	37,499	34,149	66,036	30,302	3,420	100.0	33.3	14.6	13.3	25.7	11.8	1.3
1979	275,760	87,275	64,662	22,613	188,485	54,276	24,227	77,912	28,559	3,511	100.0	31.6	19.7	8.8	28.3	10.4	1.3
1980	285,129	91,319	69,308	22,011	193,810	52,325	25,907	82,400	30,702	2,476	100.0	32.0	18.4	9.1	28.9	10.8	0.9
1981	294,078	100,376	79,046	21,330	193,702	50,082	27,839	81,977	31,200	2,604	100.0	34.1	17.0	9.5	27.9	10.6	0.9
1982	293,344	102,988	80,606	22,382	190,356	47,760	28,059	82,741	29,020	2,776	100.0	35.1	16.3	9.6	28.2	9.9	0.9
1983	281,998	96,909	76,745	20,164	185,089	45,748	27,316	81,802	27,745	2,478	100.0	34.4	16.2	9.7	29.0	9.8	0.9
1984	285,443	95,419	76,811	18,608	190,024	46,934	28,138	86,384	26,512	2,056	100.0	33.4	16.4	9.9	30.3	9.3	0.7
1985	288,343	98,924	80,936	17,988	189,419	42,519	27,256	90,213	27,640	1,791	100.0	34.3	14.7	9.5	31.3	9.6	0.6
1986	291,720	99,482	83,027	16,455	192,238	44,251	27,503	91,310	27,630	1,544	100.0	34.1	15.2	9.4	31.3	9.5	0.5
1987	294,852	96,092	78,876	17,216	198,760	46,297	30,279	92,784	27,528	1,872	100.0	32.6	15.7	10.3	31.5	9.3	0.6
1988	298,029	94,579	75,143	19,436	203,446	46,485	35,874	90,494	28,782	1,811	100.0	31.7	15.6	12.0	30.4	9.7	0.6
1989	300,019	99,564	80,222	19,342	200,456	46,388	34,915	91,016	26,337	1,800	100.0	33.2	15.5	11.6	30.3	8.8	0.6
1990	324,220	111,211	90,305	20,906	213,008	46,570	41,196	95,762	27,351	2,129	100.0	34.3	14.4	12.7	29.5	8.4	0.7

Source: From 1960 to 1989, School Fundamental Survey, Various Years.
For 1990, Quick Report of the School Fundamental Survey, 1990.

Appendix Table C-2

Employed Graduates by Industry — 4-Year Institutions, Male, All Departments

	Total N. of Graduates	N. of Employed Graduates									% Distribution						
		Primary & Secondary Sector			Tertiary Sector												
		Total	Manufacturing	Others	Total	Trade	Bank/ Insurance	Services/ Transport	Government	Others	Total	Primary & Secondary Sector	Trade	Bank/ Insurance	Services/ Transport	Government	Others
1960	89,166	36,746	31,141	5,605	52,420	13,500	10,112	21,094	4,885	2,829	100.0	41.2	15.1	11.3	23.7	5.5	3.2
1961	92,229	40,074	34,411	5,663	52,155	14,574	11,824	19,049	4,225	2,483	100.0	43.5	15.8	12.8	20.7	4.6	2.7
1962	98,120	46,587	40,033	6,554	51,533	14,566	10,872	18,974	4,950	2,171	100.0	47.5	14.8	11.1	19.3	5.0	2.2
1963	104,745	47,759	40,722	7,037	56,986	16,391	10,799	21,159	5,830	2,807	100.0	45.6	15.6	10.3	20.2	5.6	2.7
1964	111,003	50,708	43,113	7,595	60,295	19,049	10,751	21,807	5,969	2,719	100.0	45.7	17.2	9.7	19.6	5.4	2.4
1965	117,891	54,802	46,296	8,506	63,089	19,820	10,763	23,055	6,262	3,189	100.0	46.5	16.8	9.1	19.6	5.3	2.7
1966	123,938	51,231	42,230	9,001	72,707	23,277	12,043	24,563	8,611	4,213	100.0	41.3	18.8	9.7	19.8	6.9	3.4
1967	131,148	56,916	46,571	10,345	74,232	25,028	10,812	24,273	8,982	5,137	100.0	43.4	19.1	8.2	18.5	6.8	3.9
1968	137,653	60,184	49,643	10,541	77,469	27,289	10,569	24,578	8,153	6,880	100.0	43.7	19.8	7.7	17.9	5.9	5.0
1969	147,044	64,769	53,291	11,478	82,275	31,284	11,766	24,492	8,044	6,689	100.0	44.0	21.3	8.0	16.7	5.5	4.5
1970	159,037	78,806	66,662	12,144	80,239	29,381	14,923	25,086	9,891	958	100.0	49.6	18.5	9.4	15.8	6.2	0.6
1971	183,242	89,671	71,821	17,850	93,571	31,129	18,973	29,306	13,289	874	100.0	48.9	17.0	10.4	16.0	7.3	0.5
1972	186,334	84,957	63,542	21,415	101,377	32,390	21,536	29,733	15,562	2,156	100.0	45.6	17.4	11.6	16.0	8.4	1.2
1973	189,385	83,461	61,343	22,118	105,924	29,036	23,797	31,997	18,647	2,447	100.0	44.1	15.3	12.6	16.9	9.8	1.3
1974	192,691	80,126	58,775	21,351	112,565	31,697	25,085	31,059	21,393	3,331	100.0	41.6	16.4	13.0	16.1	11.1	1.7
1975	190,246	74,089	56,467	17,622	116,157	35,598	25,323	33,128	20,045	2,063	100.0	38.9	18.7	13.3	17.4	10.5	1.1
1976	187,774	72,991	55,228	17,763	114,783	30,185	31,033	32,724	16,764	4,077	100.0	38.9	16.1	16.5	17.4	8.9	2.2
1977	196,809	78,626	61,680	16,946	118,183	31,534	30,135	32,155	20,992	3,367	100.0	40.0	16.0	15.3	16.3	10.7	1.7
1978	204,997	77,495	59,645	17,850	127,502	31,049	30,754	35,988	26,882	2,829	100.0	37.8	15.1	15.0	17.6	13.1	1.4
1979	218,101	77,691	56,992	20,699	140,410	46,771	21,577	44,144	25,256	2,662	100.0	35.6	21.4	9.9	20.2	11.6	1.2
1980	223,571	82,137	61,777	20,360	141,434	44,192	23,718	45,359	26,420	1,745	100.0	36.7	19.8	10.6	20.3	11.8	0.8
1981	229,511	89,553	69,871	19,682	139,958	41,944	24,866	45,104	26,255	1,789	100.0	39.0	18.3	10.8	19.7	11.4	0.8
1982	229,315	91,585	70,856	20,729	137,730	39,668	24,876	46,136	24,918	2,132	100.0	39.9	17.3	10.8	20.1	10.9	0.9
1983	219,465	85,799	67,156	18,643	133,666	37,531	23,706	47,241	23,407	1,781	100.0	39.1	17.1	10.8	21.5	10.7	0.8
1984	220,812	83,027	65,993	17,034	137,785	37,899	24,777	50,969	22,513	1,627	100.0	37.6	17.2	11.2	23.1	10.2	0.7
1985	221,453	85,569	69,485	16,084	135,884	34,313	23,247	53,843	23,111	1,370	100.0	38.6	15.5	10.5	24.3	10.4	0.6
1986	222,954	85,363	70,502	14,861	137,591	35,242	23,140	55,201	22,823	1,185	100.0	38.3	15.8	10.4	24.8	10.2	0.5
1987	221,941	82,344	66,771	15,573	139,597	36,564	24,613	54,781	22,267	1,372	100.0	37.1	16.5	11.1	24.7	10.0	0.6
1988	222,587	79,689	62,387	17,302	142,896	36,112	28,091	53,947	23,291	1,455	100.0	35.8	16.2	12.6	24.2	10.5	0.7
1989	221,036	82,746	65,827	16,919	138,290	36,231	26,747	52,665	21,156	1,491	100.0	37.4	16.4	12.1	23.8	9.6	0.7
1990	235,328	91,722	73,367	18,355	143,605	35,392	31,489	53,939	21,123	1,662	100.0	39.0	15.0	13.4	22.9	9.0	0.7

Source: From 1960 to 1989, School Fundamental Survey, Various Years.
For 1990, Quick Report of the School Fundamental Survey, 1990.

Appendix Table C-3

Employed Graduates by Industry — 4-Year Institutions, Female, All Departments

	Total N. of Graduates	N. of Employed Graduates										% Distribution						
		Primary & Secondary Sector				Tertiary Sector												
		Total	Manufacturing	Others	Total	Trade	Bank/ Insurance	Services/ Transport	Government	Others		Total	Primary & Secondary Sector	Trade	Bank/ Insurance	Services/ Transport	Government	Others
1960	10,540	1,720	1,586	134	8,820	757	193	7,168	376	326		100.0	16.3	7.2	1.8	68.0	3.6	3.1
1961	12,235	1,959	1,832	127	10,276	947	304	8,223	394	408		100.0	16.0	7.7	2.5	67.2	3.2	3.3
1962	12,871	2,135	2,000	135	10,736	858	310	8,804	440	324		100.0	16.6	6.7	2.4	68.4	3.4	2.5
1963	14,586	2,322	2,178	144	12,264	954	277	10,118	507	408		100.0	15.9	6.5	1.9	69.4	3.5	2.8
1964	16,809	2,692	2,518	174	14,117	1,074	277	11,641	515	610		100.0	16.0	6.4	1.6	69.3	3.1	3.6
1965	17,528	2,740	2,535	205	14,788	1,048	202	12,363	513	662		100.0	15.6	6.0	1.2	70.5	2.9	3.8
1966	18,448	2,339	2,117	222	16,109	1,207	244	13,481	570	607		100.0	12.7	6.5	1.3	73.1	3.1	3.3
1967	19,723	2,879	2,618	261	16,844	1,322	224	14,008	614	676		100.0	14.6	6.7	1.1	71.0	3.1	3.4
1968	21,304	3,280	2,969	311	18,024	1,632	293	14,439	650	1,010		100.0	15.4	7.7	1.4	67.8	3.1	4.7
1969	25,081	4,251	3,840	411	20,830	2,483	497	16,079	723	1,048		100.0	16.9	9.9	2.0	64.1	2.9	4.2
1970	29,190	6,850	6,127	723	22,340	2,847	1,239	16,997	975	282		100.0	23.5	9.8	4.2	58.2	3.3	1.0
1971	32,353	7,576	6,755	821	24,777	2,953	2,215	17,901	1,422	286		100.0	23.4	9.1	6.8	55.3	4.4	0.9
1972	30,974	6,313	5,368	945	24,661	2,620	2,638	17,673	1,340	390		100.0	20.4	8.5	8.5	57.1	4.3	1.3
1973	34,504	6,103	5,053	1,050	28,401	3,163	3,337	19,468	1,619	814		100.0	17.7	9.2	9.7	56.4	4.7	2.4
1974	37,996	7,275	6,340	935	30,721	3,840	3,613	20,414	2,173	681		100.0	19.1	10.1	9.5	53.7	5.7	1.8
1975	42,437	7,137	5,933	1,204	35,300	5,134	3,936	23,565	2,000	665		100.0	16.8	12.1	9.3	55.5	4.7	1.6
1976	42,689	6,727	5,570	1,157	35,962	4,375	2,749	25,678	2,228	932		100.0	15.8	10.2	6.4	60.2	5.2	2.2
1977	47,808	7,490	6,203	1,287	40,318	5,555	2,805	28,248	2,891	819		100.0	15.7	11.6	5.9	59.1	6.0	1.7
1978	51,820	7,916	6,444	1,472	43,904	6,450	3,395	30,048	3,420	591		100.0	15.3	12.4	6.6	58.0	6.6	1.1
1979	57,659	9,584	7,670	1,914	48,075	7,505	2,650	33,768	3,303	849		100.0	16.6	13.0	4.6	58.6	5.7	1.5
1980	61,558	9,182	7,531	1,651	52,376	8,133	2,189	37,041	4,282	731		100.0	14.9	13.2	3.6	60.2	7.0	1.2
1981	64,567	10,823	9,175	1,648	53,744	8,138	2,973	36,873	4,915	815		100.0	16.8	12.6	4.6	57.1	7.7	1.3
1982	64,029	11,403	9,750	1,653	52,626	8,092	3,183	36,605	4,102	644		100.0	17.8	12.6	5.0	57.2	6.4	1.0
1983	62,533	11,110	9,589	1,521	51,423	8,217	3,610	34,561	4,338	697		100.0	17.8	13.1	5.8	55.3	6.9	1.1
1984	64,631	12,392	10,818	1,574	52,239	9,035	3,361	35,415	3,999	429		100.0	19.2	14.0	5.2	54.8	6.2	0.7
1985	66,890	13,355	11,451	1,904	53,535	8,206	4,009	36,370	4,529	421		100.0	20.0	12.3	6.0	54.4	6.8	0.6
1986	68,766	14,119	12,525	1,594	54,647	9,009	4,363	36,109	4,807	359		100.0	20.5	13.1	6.3	52.5	7.0	0.5
1987	72,911	13,748	12,105	1,643	59,163	9,733	5,666	38,003	5,261	500		100.0	18.9	13.3	7.8	52.1	7.2	0.7
1988	75,442	14,890	12,756	2,134	60,550	10,373	7,783	36,547	5,491	356		100.0	19.7	13.7	10.3	48.4	7.3	0.5
1989	78,983	16,818	14,395	2,423	62,166	10,157	8,168	38,351	5,181	309		100.0	21.3	12.9	10.3	48.6	6.6	0.4
1990	88,892	19,489	16,938	2,551	69,404	11,178	9,708	41,823	6,228	467		100.0	21.9	12.6	10.9	47.0	7.0	0.5

Source: From 1960 to 1989, School Fundamental Survey, Various Years.
For 1990, Quick Report of the School Fundamental Survey, 1990.

Appendix Table C-4

Employed Graduates by Industry — 2-Year Institutions, Both Sexes, All Departments

	Total N. of Graduates	N. of Employed Graduates									% Distribution						
		Primary & Secondary Sector			Tertiary Sector						Total	Primary & Secondary Sector	Trade	Bank/ Insurance	Services/ Transport	Govern- ment	Others
		Total	Manufac- turing	Others	Total	Trade	Bank/ Insurance	Services Transport	Govern- ment	Others							
1960	17,917	5,503	4,523	980	12,414	2,125	1,118	6,344	1,838	989	100.0	30.7	11.9	6.2	35.4	10.3	5.5
1961	20,553	6,565	5,563	1,002	13,988	2,324	1,561	7,406	1,809	888	100.0	31.9	11.3	7.6	36.0	8.8	4.3
1962	22,951	7,244	6,303	941	15,707	2,587	1,725	8,231	2,012	1,152	100.0	31.6	11.3	7.5	35.9	8.8	5.0
1963	26,542	8,210	7,181	1,029	18,332	2,791	2,229	9,710	2,408	1,194	100.0	30.9	10.5	8.4	36.6	9.1	4.5
1964	32,897	10,501	9,138	1,363	22,396	3,611	3,028	11,791	2,603	1,363	100.0	31.9	11.0	9.2	35.8	7.9	4.1
1965	35,547	10,713	9,250	1,463	24,834	4,201	3,068	13,379	2,779	1,407	100.0	30.1	11.8	8.6	37.6	7.8	4.0
1966	33,919	9,577	8,143	1,434	24,342	3,973	2,565	13,384	3,012	1,408	100.0	28.2	11.7	7.6	39.5	8.9	4.2
1967	45,447	12,767	10,797	1,970	32,680	6,038	3,075	18,257	3,124	2,186	100.0	28.1	13.3	6.8	40.2	6.9	4.8
1968	63,562	18,096	15,288	2,808	45,466	8,615	5,033	25,475	3,579	2,764	100.0	28.5	13.6	7.9	40.1	5.6	4.3
1969	75,579	19,642	16,537	3,105	55,937	10,741	7,240	30,163	3,674	4,119	100.0	26.0	14.2	9.6	39.9	4.9	5.4
1970	80,740	21,986	18,701	3,285	58,754	10,652	11,039	32,916	3,295	852	100.0	27.2	13.2	13.7	40.8	4.1	1.1
1971	82,580	22,509	18,397	4,112	60,071	10,313	12,536	32,095	4,081	1,046	100.0	27.3	12.5	15.2	38.9	4.9	1.3
1972	75,861	18,802	15,290	3,512	57,059	9,854	11,550	30,977	3,528	1,150	100.0	24.8	13.0	15.2	40.8	4.7	1.5
1973	91,704	21,603	17,698	3,905	70,101	12,239	13,700	37,828	5,057	1,277	100.0	23.6	13.3	14.9	41.3	5.5	1.4
1974	98,863	24,317	20,106	4,211	74,546	13,441	15,695	38,517	5,418	1,475	100.0	24.6	13.6	15.9	39.0	5.5	1.5
1975	103,314	24,480	19,870	4,610	78,834	14,253	15,926	42,524	4,633	1,498	100.0	23.7	13.8	15.4	41.2	4.5	1.4
1976	104,168	23,260	18,406	4,854	80,908	13,983	11,989	46,448	5,994	2,494	100.0	22.3	13.4	11.5	44.6	5.8	2.4
1977	114,340	25,150	20,152	4,998	89,190	16,283	13,575	49,349	8,015	1,968	100.0	22.0	14.2	11.9	43.2	7.0	1.7
1978	115,423	23,710	18,349	5,361	91,713	15,760	14,445	51,701	7,930	1,877	100.0	20.5	13.7	12.5	44.8	6.9	1.6
1979	123,442	25,811	20,464	5,347	97,631	18,928	14,241	54,505	8,013	1,944	100.0	20.9	15.3	11.5	44.2	6.5	1.6
1980	129,156	28,870	23,309	5,561	100,286	19,758	17,251	53,175	8,131	1,971	100.0	22.4	15.3	13.4	41.2	6.3	1.5
1981	130,087	29,953	24,442	5,511	100,134	19,252	20,022	51,750	7,465	1,645	100.0	23.0	14.8	15.4	39.8	5.7	1.3
1982	130,100	30,654	25,345	5,309	99,446	18,885	19,947	51,205	7,598	1,811	100.0	23.6	14.5	15.3	39.4	5.8	1.4
1983	131,609	30,513	24,874	5,639	101,096	18,660	20,270	52,696	8,063	1,407	100.0	23.2	14.2	15.4	40.0	6.1	1.1
1984	134,463	31,529	26,426	5,103	102,934	19,350	22,701	52,208	7,191	1,484	100.0	23.4	14.4	16.9	38.8	5.3	1.1
1985	140,870	35,925	30,067	5,858	104,945	19,776	22,350	54,645	7,025	1,149	100.0	25.5	14.0	15.9	38.8	5.0	0.8
1986	139,639	31,015	25,536	5,479	108,624	23,038	20,884	56,972	6,604	1,126	100.0	22.2	16.5	15.0	40.8	4.7	0.8
1987	133,221	26,493	21,464	5,029	106,728	22,014	23,623	53,918	6,091	1,082	100.0	19.9	16.5	17.7	40.5	4.6	0.8
1988	160,881	32,501	26,145	6,356	128,380	29,051	27,726	63,849	6,592	1,162	100.0	20.2	18.1	17.2	39.7	4.1	0.7
1989	174,460	40,493	33,455	7,038	133,966	31,169	30,417	65,061	6,063	1,256	100.0	23.2	17.9	17.4	37.3	3.5	0.7
1990	181,230	42,273	34,955	7,318	138,958	31,560	34,693	65,435	6,017	1,253	100.0	23.3	17.4	19.1	36.1	3.3	0.7

Source: From 1960 to 1989, School Fundamental Survey, Various Years.
For 1990, Quick Report of the School Fundamental Survey, 1990.

Appendix Table C-5

Employed Graduates by Industry — 4-Year Institutions, Both Sexes, Humanities

	Total N. of Graduates	N. of Employed Graduates									% Distribution						
		Primary & Secondary Sector			Tertiary Sector												
		Total	Manufacturing	Others	Total	Trade	Bank/ Insurance	Services/ Transport	Government	Others	Total	Primary & Secondary Sector	Trade	Bank/ Insurance	Services/ Transport	Government	Others
1960	13,318	3,033	2,834	199	10,285	2,226	842	5,856	758	603	100.0	22.8	16.7	6.3	44.0	5.7	4.5
1961	13,426	3,272	3,097	175	10,154	2,610	1,054	5,197	660	633	100.0	24.4	19.4	7.9	38.7	4.9	4.7
1962	13,570	3,489	3,277	212	10,081	2,623	953	5,381	724	400	100.0	25.7	19.3	7.0	39.7	5.3	2.9
1963	14,610	3,519	3,332	187	11,091	2,544	828	6,442	808	469	100.0	24.1	17.4	5.7	44.1	5.5	3.2
1964	16,497	3,905	3,678	227	12,592	2,867	794	7,621	808	502	100.0	23.7	17.4	4.8	46.2	4.9	3.0
1965	16,667	3,913	3,669	244	12,754	2,672	625	7,982	794	681	100.0	23.5	16.0	3.7	47.9	4.8	4.1
1966	16,040	3,323	3,068	255	12,717	2,980	725	7,246	1,008	758	100.0	20.7	18.6	4.5	45.2	6.3	4.7
1967	17,392	3,947	3,658	289	13,445	3,190	730	7,551	1,004	970	100.0	22.7	18.3	4.2	43.4	5.8	5.6
1968	14,470	3,391	3,126	265	11,079	2,769	539	5,922	639	1,210	100.0	23.4	19.1	3.7	40.9	4.4	8.4
1969	15,465	3,711	3,425	286	11,754	3,281	651	6,364	565	893	100.0	24.0	21.2	4.2	41.2	3.7	5.8
1970	18,414	5,520	5,047	473	12,894	3,959	1,398	6,705	604	228	100.0	30.0	21.5	7.6	36.4	3.3	1.2
1971	20,841	6,048	5,474	574	14,793	4,115	1,789	7,526	1,180	183	100.0	29.0	19.7	8.6	36.1	5.7	0.9
1972	20,618	5,504	4,724	780	15,114	3,771	2,381	7,516	1,224	222	100.0	26.7	18.3	11.5	36.5	5.9	1.1
1973	21,927	4,961	4,206	755	16,966	4,134	2,514	8,304	1,625	389	100.0	22.6	18.9	11.5	37.9	7.4	1.8
1974	23,035	5,116	4,528	588	17,919	4,646	3,028	8,021	1,817	407	100.0	22.2	20.2	13.1	34.8	7.9	1.8
1975	23,843	4,793	4,163	630	19,050	5,077	3,381	8,380	1,916	296	100.0	20.1	21.3	14.2	35.1	8.0	1.2
1976	23,263	4,617	3,995	622	18,646	3,898	2,253	10,705	1,340	450	100.0	19.8	16.8	9.7	46.0	5.8	1.9
1977	25,810	5,135	4,382	753	20,675	4,923	2,284	11,380	1,682	406	100.0	19.9	19.1	8.8	44.1	6.5	1.6
1978	27,831	5,651	4,787	864	22,180	5,005	2,554	12,090	2,354	177	100.0	20.3	18.0	9.2	43.4	8.5	0.6
1979	30,921	6,685	5,360	1,325	24,236	6,632	2,011	12,960	2,269	364	100.0	21.6	21.4	6.5	41.9	7.3	1.2
1980	33,231	5,934	4,917	1,017	27,297	6,360	1,555	16,083	2,972	327	100.0	17.9	19.1	4.7	48.4	8.9	1.0
1981	35,157	6,569	5,597	972	28,588	6,489	2,067	16,168	3,400	464	100.0	18.7	18.5	5.9	46.0	9.7	1.3
1982	36,093	6,835	5,882	953	29,258	6,673	2,401	16,925	2,934	325	100.0	18.9	18.5	6.7	46.9	8.1	0.9
1983	35,847	6,712	5,845	867	29,135	6,673	2,651	16,320	3,105	386	100.0	18.7	18.6	7.4	45.5	8.7	1.1
1984	38,199	7,391	6,448	943	30,808	7,416	2,573	17,863	2,844	112	100.0	19.3	19.4	6.7	46.8	7.4	0.3
1985	38,866	8,097	6,867	1,230	30,769	6,708	2,797	18,313	2,751	200	100.0	20.8	17.3	7.2	47.1	7.1	0.5
1986	39,806	7,784	6,906	878	32,022	7,402	2,842	18,842	2,796	140	100.0	19.6	18.6	7.1	47.3	7.0	0.4
1987	40,754	7,565	6,512	1,053	33,189	7,878	3,408	18,392	3,179	332	100.0	18.6	19.3	8.4	45.1	7.8	0.8
1988	41,837	8,057	6,847	1,210	33,779	8,332	4,837	17,427	3,029	154	100.0	19.3	19.9	11.6	41.7	7.2	0.4
1989	43,521	9,068	7,739	1,329	34,453	8,418	4,803	18,141	3,022	69	100.0	20.8	19.3	11.0	41.7	6.9	0.2
1990	47,952	9,875	8,570	1,305	38,075	8,580	5,896	19,782	3,460	357	100.0	20.6	17.9	12.3	41.3	7.2	0.7

Source: From 1960 to 1989, School Fundamental Survey, Various Years.
For 1990, Quick Report of the School Fundamental Survey, 1990.

Appendix Table C-6

Employed Graduates by Industry — 4-Year Institutions, Both Sexes, Social Sciences

	Total N. of Graduates	N. of Employed Graduates									% Distribution						
		Primary & Secondary Sector				Tertiary Sector											
		Total	Manufacturing	Others	Total	Trade	Bank/ Insurance	Services/ Transport	Government	Others	Total	Primary & Secondary Sector	Trade	Bank/ Insurance	Services/ Transport	Government	Others
1960	44,843	16,240	14,567	1,673	28,603	10,647	9,102	4,524	2,634	1,696	100.0	36.2	23.7	20.3	10.1	5.9	3.8
1961	46,858	17,396	15,701	1,695	29,462	11,212	10,705	3,977	2,231	1,337	100.0	37.1	23.9	22.8	8.5	4.8	2.9
1962	49,960	20,671	18,627	2,044	29,289	11,188	9,897	4,523	2,609	1,072	100.0	41.4	22.4	19.8	9.1	5.2	2.1
1963	54,049	21,094	18,778	2,316	32,955	13,124	9,840	5,312	3,156	1,523	100.0	39.0	24.3	18.2	9.8	5.8	2.8
1964	57,102	21,420	19,255	2,165	35,682	15,328	9,852	5,817	3,210	1,475	100.0	37.5	26.8	17.3	10.2	5.6	2.6
1965	62,338	23,469	20,896	2,573	38,869	16,283	9,927	7,185	3,550	1,924	100.0	37.6	26.1	15.9	11.5	5.7	3.1
1966	66,059	19,758	17,049	2,709	46,301	19,003	11,231	8,482	4,960	2,625	100.0	29.9	28.8	17.0	12.8	7.5	4.0
1967	69,616	22,455	19,505	2,950	47,161	20,228	9,936	8,228	5,391	3,378	100.0	32.3	29.1	14.3	11.8	7.7	4.9
1968	77,298	24,806	22,046	2,760	52,492	22,661	9,725	10,034	5,539	4,533	100.0	32.1	29.3	12.6	13.0	7.2	5.9
1969	83,063	26,372	23,476	2,896	56,691	26,047	10,935	10,511	5,297	3,901	100.0	31.7	31.4	13.2	12.7	6.4	4.7
1970	89,045	32,556	29,025	3,531	56,489	24,154	13,875	11,672	6,435	353	100.0	36.6	27.1	15.6	13.1	7.2	0.4
1971	100,593	35,572	30,541	5,031	65,021	25,241	18,179	12,753	8,537	311	100.0	35.4	25.1	18.1	12.7	8.5	0.3
1972	101,809	32,290	26,341	5,949	69,519	26,044	20,262	13,160	9,223	830	100.0	31.7	25.6	19.9	12.9	9.1	0.8
1973	104,141	31,940	25,459	6,481	72,201	22,805	22,927	13,091	12,150	1,228	100.0	30.7	21.9	22.0	12.6	11.7	1.2
1974	105,875	28,376	23,060	5,316	77,499	24,741	23,695	12,969	14,548	1,546	100.0	26.8	23.4	22.4	12.2	13.7	1.5
1975	106,680	25,590	21,821	3,769	81,090	28,221	23,675	14,371	13,908	915	100.0	24.0	26.5	22.2	13.5	13.0	0.9
1976	106,358	25,387	20,964	4,423	80,971	23,067	29,484	12,946	13,167	2,307	100.0	23.9	21.7	27.7	12.2	12.4	2.2
1977	110,926	28,141	24,407	3,734	82,785	23,613	28,488	12,852	16,211	1,621	100.0	25.4	21.3	25.7	11.6	14.6	1.5
1978	116,179	26,263	22,461	3,802	89,916	23,950	29,575	14,701	20,268	1,422	100.0	22.6	20.6	25.5	12.7	17.4	1.2
1979	123,673	27,950	22,836	5,114	95,723	36,937	20,663	19,397	17,598	1,128	100.0	22.6	29.9	16.7	15.7	14.2	0.9
1980	127,902	28,963	23,768	5,195	98,939	36,428	23,077	19,478	19,055	901	100.0	22.6	28.5	18.0	15.2	14.9	0.7
1981	131,543	32,523	27,775	4,748	99,020	35,432	24,240	18,637	19,687	1,024	100.0	24.7	26.9	18.4	14.2	15.0	0.8
1982	132,306	33,283	27,660	5,623	99,023	33,975	24,311	20,010	19,093	1,634	100.0	25.2	25.7	18.4	15.1	14.4	1.2
1983	126,557	30,472	25,711	4,761	96,085	32,498	23,226	21,442	17,823	1,096	100.0	24.1	25.7	18.4	16.9	14.1	0.9
1984	127,555	29,928	25,634	4,294	97,627	32,087	23,799	23,569	17,049	1,123	100.0	23.5	25.2	18.7	18.5	13.4	0.9
1985	127,602	30,543	26,279	4,261	97,059	29,937	22,700	25,851	17,762	809	100.0	23.9	23.5	17.8	20.3	13.9	0.6
1986	128,683	31,015	27,283	3,732	97,668	30,368	22,676	26,179	17,778	667	100.0	24.1	23.6	17.6	20.3	13.8	0.5
1987	127,315	27,403	23,148	4,255	99,912	31,306	24,206	26,478	17,101	821	100.0	21.5	24.6	19.0	20.8	13.4	0.6
1988	128,673	27,360	22,168	5,192	101,314	30,065	27,091	25,626	17,575	957	100.0	21.3	23.4	21.1	19.9	13.7	0.7
1989	127,986	29,847	24,657	5,190	98,139	30,198	25,778	25,312	15,681	1,170	100.0	23.3	23.6	20.1	19.8	12.3	0.9
1990	138,177	34,426	28,104	6,322	103,750	29,840	29,738	27,601	15,666	905	100.0	24.9	21.6	21.5	20.0	11.3	0.7

Source: From 1960 to 1989, School Fundamental Survey, Various Years.
For 1990, Quick Report of the School Fundamental Survey, 1990.

Appendix Table C-7

Employed Graduates by Industry — 4-Year Institutions, Both Sexes, Natural Sciences

	Total N. of Graduates	N. of Employed Graduates										% Distribution						
		Primary & Secondary Sector			Tertiary Sector													
		Total	Manufacturing	Others	Total	Trade	Bank/ Insurance	Services/ Transport	Government	Others		Total	Primary & Secondary Sector	Trade	Bank/ Insurance	Services/ Transport	Government	Others
1960	2,654	1,568	1,496	72	1,086	75	44	746	142	79		100.0	59.1	2.8	1.7	28.1	5.4	3.0
1961	2,807	1,859	1,779	80	948	104	46	628	110	60		100.0	66.2	3.7	1.6	22.4	3.9	2.1
1962	2,827	1,925	1,827	98	902	87	34	608	131	42		100.0	68.1	3.1	1.2	21.5	4.6	1.5
1963	3,113	1,801	1,726	75	1,312	71	70	967	125	79		100.0	57.9	2.3	2.2	31.1	4.0	2.5
1964	3,255	1,736	1,660	76	1,519	108	67	1,117	135	92		100.0	53.3	3.3	2.1	34.3	4.1	2.8
1965	3,522	1,903	1,806	97	1,619	115	81	1,214	129	80		100.0	54.0	3.3	2.3	34.5	3.7	2.3
1966	3,831	1,703	1,605	98	2,128	164	68	1,657	148	91		100.0	44.5	4.3	1.8	43.3	3.9	2.4
1967	3,894	1,825	1,728	97	2,069	167	42	1,617	127	116		100.0	46.9	4.3	1.1	41.5	3.3	3.0
1968	4,337	2,177	2,067	110	2,160	297	79	1,379	147	258		100.0	50.2	6.8	1.8	31.8	3.4	5.9
1969	4,887	2,605	2,448	157	2,282	353	135	1,439	155	200		100.0	53.3	7.2	2.8	29.4	3.2	4.1
1970	5,016	3,095	2,924	171	1,921	307	126	1,243	183	62		100.0	61.7	6.1	2.5	24.8	3.6	1.2
1971	5,850	3,698	3,494	204	2,152	335	172	1,358	252	35		100.0	63.2	5.7	2.9	23.2	4.3	0.6
1972	5,885	3,122	2,915	207	2,763	347	260	1,587	404	165		100.0	53.1	5.9	4.4	27.0	6.9	2.8
1973	5,793	2,687	2,427	260	3,106	418	227	1,856	387	218		100.0	46.4	7.2	3.9	32.0	6.7	3.8
1974	6,413	2,987	2,757	230	3,426	424	338	2,102	473	89		100.0	46.6	6.6	5.3	32.8	7.4	1.4
1975	6,408	2,506	2,346	160	3,902	537	359	2,435	465	106		100.0	39.1	8.4	5.6	38.0	7.3	1.7
1976	6,147	2,031	1,836	195	4,116	658	334	2,567	376	181		100.0	33.0	10.7	5.4	41.8	6.1	2.9
1977	6,477	2,160	2,020	140	4,317	699	312	2,745	372	189		100.0	33.3	10.8	4.8	42.4	5.7	2.9
1978	6,762	2,057	1,839	218	4,705	695	279	3,057	541	133		100.0	30.4	10.3	4.1	45.2	8.0	2.0
1979	6,971	2,311	2,120	191	4,660	510	204	3,073	655	218		100.0	33.2	7.3	2.9	44.1	9.4	3.1
1980	7,590	2,413	2,165	248	5,177	586	182	3,645	623	141		100.0	31.8	7.7	2.4	48.0	8.2	1.9
1981	7,838	2,873	2,563	310	4,965	539	172	3,434	668	152		100.0	36.7	6.9	2.2	43.8	8.5	1.9
1982	7,677	3,267	2,997	270	4,410	514	156	3,292	334	114		100.0	42.6	6.7	2.0	42.9	4.4	1.5
1983	7,847	3,292	3,056	236	4,555	307	151	3,481	422	194		100.0	42.0	3.9	1.9	44.4	5.4	2.5
1984	8,304	3,078	2,903	175	5,226	497	208	3,959	468	94		100.0	37.1	6.0	2.5	47.7	5.6	1.1
1985	8,766	3,578	3,440	138	5,188	271	179	4,218	448	72		100.0	40.8	3.1	2.0	48.1	5.1	0.8
1986	8,851	3,698	3,557	141	5,153	296	240	4,071	446	100		100.0	41.8	3.3	2.7	46.0	5.0	1.1
1987	9,261	3,780	3,610	170	5,481	346	256	4,467	321	91		100.0	40.8	3.7	2.8	48.2	3.5	1.0
1988	9,259	3,344	3,083	261	5,914	338	393	4,688	377	118		100.0	36.1	3.7	4.2	50.6	4.1	1.3
1989	9,269	3,995	3,831	164	5,273	364	509	3,842	505	53		100.0	43.1	3.9	5.5	41.4	5.4	0.6
1990	9,252	4,217	4,022	195	5,036	326	600	3,455	397	258		100.0	45.6	3.5	6.5	37.3	4.3	2.8

Source: From 1960 to 1989, School Fundamental Survey, Various Years.
For 1990, Quick Report of the School Fundamental Survey, 1990.

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Appendix Table C-8

Employed Graduates by Industry — 4-Year Institutions, Both Sexes, Engineering

	Total N. of Graduates	Primary & Secondary Sector			N. of Employed Graduates						% Distribution						
		Total	Manufacturing	Others	Total	Tertiary Sector			Government	Others	Total	Primary & Secondary Sector	Trade	Bank/ Insurance	Services/ Transport	Government	Others
						Trade	Bank/ Insurance	Services/ Transport									
1960	15,462	13,471	10,477	2,994	1,991	529	103	771	384	204	100.0	87.1	3.4	0.7	5.0	2.5	1.3
1961	16,864	14,585	11,488	3,097	2,279	591	95	768	543	282	100.0	86.5	3.5	0.6	4.6	3.2	1.7
1962	19,605	17,244	13,780	3,464	2,361	584	94	839	629	215	100.0	88.0	3.0	0.5	4.3	3.2	1.1
1963	21,587	18,406	14,606	3,800	3,181	606	111	1,304	863	297	100.0	85.3	2.8	0.5	6.0	4.0	1.4
1964	24,466	20,802	16,303	4,499	3,664	931	119	1,389	920	305	100.0	85.0	3.8	0.5	5.7	3.8	1.2
1965	26,698	22,646	17,656	4,990	4,052	854	135	1,705	994	364	100.0	84.8	3.2	0.5	6.4	3.7	1.4
1966	29,221	23,449	18,319	5,130	5,772	1,179	109	2,309	1,637	538	100.0	80.2	4.0	0.4	7.9	5.6	1.8
1967	32,372	25,824	19,952	5,872	6,548	1,482	156	2,527	1,605	778	100.0	79.8	4.6	0.5	7.8	5.0	2.4
1968	33,649	27,222	20,759	6,463	6,427	1,722	273	2,359	1,097	976	100.0	80.9	5.1	0.8	7.0	3.3	2.9
1969	37,444	30,105	22,906	7,199	7,339	2,170	287	2,229	1,163	1,490	100.0	80.4	5.8	0.8	6.0	3.1	4.0
1970	41,983	36,231	28,782	7,449	5,752	1,911	316	1,835	1,414	276	100.0	86.3	4.6	0.8	4.4	3.4	0.7
1971	49,759	42,054	31,104	10,950	7,705	1,797	408	3,082	2,032	386	100.0	84.5	3.6	0.8	6.2	4.1	0.8
1972	51,134	41,257	27,773	13,484	9,877	2,539	516	2,955	2,990	877	100.0	80.7	5.0	1.0	5.8	5.8	1.7
1973	52,995	41,782	27,875	13,907	11,213	2,584	675	4,165	3,097	692	100.0	78.8	4.9	1.3	7.9	5.8	1.3
1974	53,945	41,708	27,547	14,161	12,237	3,068	633	4,061	3,363	1,112	100.0	77.3	5.7	1.2	7.5	6.2	2.1
1975	54,234	40,320	27,848	12,472	13,914	4,210	861	4,795	3,266	782	100.0	74.3	7.8	1.6	8.8	6.0	1.4
1976	53,320	39,555	27,834	11,721	13,765	3,824	865	5,352	2,280	1,444	100.0	74.2	7.2	1.6	10.0	4.3	2.7
1977	56,657	41,654	30,295	11,359	15,003	3,993	980	5,356	3,348	1,326	100.0	73.5	7.0	1.7	9.5	5.9	2.3
1978	58,615	42,792	30,528	12,264	15,823	3,841	854	6,012	4,042	1,074	100.0	73.0	6.6	1.5	10.3	6.9	1.8
1979	62,421	41,605	27,828	13,777	20,816	6,798	814	7,262	4,862	1,080	100.0	66.7	10.9	1.3	11.6	7.8	1.7
1980	62,131	44,659	31,473	13,186	17,472	5,322	558	6,843	4,207	542	100.0	71.9	8.6	0.9	11.0	6.8	0.9
1981	63,639	48,292	35,254	13,038	15,347	3,745	572	7,005	3,589	436	100.0	75.9	5.9	0.9	11.0	5.6	0.7
1982	62,381	49,091	35,717	13,374	13,290	2,925	475	6,603	2,955	332	100.0	78.7	4.7	0.8	10.6	4.7	0.5
1983	58,220	45,555	33,477	12,078	12,665	2,752	473	6,205	2,822	413	100.0	78.2	4.7	0.8	10.7	4.8	0.7
1984	58,394	44,185	33,176	11,009	14,209	2,888	656	7,780	2,552	333	100.0	75.7	4.9	1.1	13.3	4.4	0.6
1985	59,216	45,743	35,373	10,370	13,473	2,058	670	7,627	2,762	356	100.0	77.2	3.5	1.1	12.9	4.7	0.6
1986	60,279	45,918	35,916	10,002	14,361	2,108	613	9,009	2,283	348	100.0	76.2	3.5	1.0	14.9	3.8	0.6
1987	61,883	46,367	36,197	10,170	15,516	2,269	870	9,662	2,369	346	100.0	74.9	3.7	1.4	15.6	3.8	0.6
1988	61,822	43,642	32,829	10,813	18,179	2,820	1,446	10,906	2,778	229	100.0	70.6	4.6	2.3	17.6	4.5	0.4
1989	61,256	43,768	33,077	10,691	17,489	2,455	1,326	10,691	2,799	218	100.0	71.5	4.0	2.2	17.5	4.6	0.4
1990	65,016	47,395	36,535	10,860	17,620	2,330	1,797	10,248	2,910	335	100.0	72.9	3.6	2.8	15.8	4.5	0.5

Source: From 1960 to 1989, School Fundamental Survey, Various Years.
For 1990, Quick Report of the School Fundamental Survey, 1990.

Appendix Table C-9

Employed Graduates by Industry — 4-Year Institutions, Both Sexes, Health-Related

	Total N. of Graduates	N. of Employed Graduates									% Distribution						
		Primary & Secondary Sector			Tertiary Sector												
		Total	Manufacturing	Others	Total	Trade	Bank/ Insurance	Services/ Transport	Government	Others	Total	Primary & Secondary Sector	Trade	Bank/ Insurance	Services/ Transport	Government	Others
1960	2,928	968	964	4	1,960	325	0	1,520	84	31	100.0	33.1	11.1	0.0	51.9	2.9	1.1
1961	3,157	1,164	1,158	6	1,993	411	0	1,474	56	52	100.0	36.9	13.0	0.0	46.7	1.8	1.6
1962	3,182	1,191	1,183	8	1,991	232	1	1,666	62	30	100.0	37.4	7.3	0.0	52.4	1.9	0.9
1963	3,388	1,402	1,401	1	1,986	270	8	1,500	90	118	100.0	41.4	8.0	0.2	44.3	2.7	3.5
1964	3,624	1,478	1,476	2	2,146	302	5	1,750	48	41	100.0	40.8	8.3	0.1	48.3	1.3	1.1
1965	3,532	1,422	1,420	2	2,110	287	11	1,689	64	59	100.0	40.3	8.1	0.3	47.8	1.8	1.7
1966	3,736	1,185	1,183	2	2,551	344	1	2,099	59	48	100.0	31.7	9.2	0.0	56.2	1.6	1.3
1967	3,878	1,138	1,137	1	2,740	375	5	2,247	86	27	100.0	29.3	9.7	0.1	57.9	2.2	0.7
1968	4,423	1,255	1,253	2	3,168	460	4	2,573	78	53	100.0	28.4	10.4	0.1	58.2	1.8	1.2
1969	4,833	1,336	1,335	1	3,497	438	4	2,861	138	56	100.0	27.6	9.1	0.1	59.2	2.9	1.2
1970	5,420	2,196	2,196	0	3,224	319	2	2,657	230	16	100.0	40.5	5.9	0.0	49.0	4.2	0.3
1971	6,192	2,367	2,350	17	3,825	586	10	2,847	363	19	100.0	38.2	9.5	0.2	46.0	5.9	0.3
1972	5,941	2,003	1,981	22	3,938	547	6	3,053	305	27	100.0	33.7	9.2	0.1	51.4	5.1	0.5
1973	6,381	1,604	1,584	20	4,777	486	24	3,711	420	136	100.0	25.1	7.6	0.4	58.2	6.6	2.1
1974	6,263	1,945	1,936	9	4,318	425	13	3,357	399	124	100.0	31.1	6.8	0.2	53.6	6.4	2.0
1975	6,310	1,615	1,606	9	4,695	376	16	3,998	245	60	100.0	25.6	6.0	0.3	63.4	3.9	1.0
1976	6,492	1,368	1,364	4	5,124	375	8	4,488	151	102	100.0	21.1	5.8	0.1	69.1	2.3	1.6
1977	6,825	1,426	1,424	2	5,399	528	13	4,587	194	77	100.0	20.9	7.7	0.2	67.2	2.8	1.1
1978	7,332	1,471	1,465	6	5,861	552	22	4,917	223	147	100.0	20.1	7.5	0.3	67.1	3.0	2.0
1979	7,969	1,348	1,348	0	6,621	590	11	5,792	203	25	100.0	16.9	7.4	0.1	72.7	2.5	0.3
1980	8,362	1,845	1,845	0	6,517	571	0	5,605	256	85	100.0	22.1	6.8	0.0	67.0	3.1	1.0
1981	8,837	2,050	2,037	13	6,787	620	29	5,975	114	49	100.0	23.2	7.0	0.3	67.6	1.3	0.6
1982	8,936	2,364	2,359	5	6,572	660	5	5,538	305	64	100.0	26.5	7.4	0.1	62.0	3.4	0.7
1983	8,958	2,300	2,300	0	6,658	617	6	5,769	231	35	100.0	25.7	6.9	0.1	64.4	2.6	0.4
1984	8,555	2,301	2,286	15	6,254	665	0	5,348	187	54	100.0	26.9	7.8	0.0	62.5	2.2	0.6
1985	8,692	2,287	2,248	39	6,405	742	0	5,433	200	30	100.0	26.3	8.5	0.0	62.5	2.3	0.3
1986	8,421	2,229	2,229	0	6,192	672	26	5,242	215	37	100.0	26.5	8.0	0.3	62.2	2.6	0.4
1987	9,022	2,328	2,323	5	6,694	925	33	5,403	275	58	100.0	25.8	10.3	0.4	59.9	3.0	0.6
1988	9,231	2,879	2,858	21	6,353	866	11	5,065	337	74	100.0	31.2	9.4	0.1	54.9	3.7	0.8
1989	9,039	2,838	2,805	33	6,203	843	32	5,019	245	64	100.0	31.4	9.3	0.4	55.5	2.7	0.7
1990	9,802	3,555	3,537	18	6,247	742	73	5,155	259	18	100.0	36.3	7.6	0.7	52.6	2.6	0.2

Source: From 1960 to 1989, School Fundamental Survey, Various Years.
For 1990, Quick Report of the School Fundamental Survey, 1990.

Appendix Table C-10

Employed Graduates by Industry — 4-Year Institutions, Both Sexes, Education

	Total N. of Graduates	N. of Employed Graduates									% Distribution						
		Primary & Secondary Sector			Tertiary Sector												
		Total	Manufacturing	Others	Total	Trade	Bank/ Insurance	Services/ Transport	Government	Others	Total	Primary & Secondary Sector	Trade	Bank/ Insurance	Services/ Transport	Government	Others
1960	12,696	235	214	21	12,461	70	50	12,113	171	48	100.0	1.9	0.6	0.5	95.4	1.3	0.4
1961	13,132	283	263	20	12,849	91	67	12,495	132	64	100.0	2.2	0.7	0.5	95.1	1.0	0.5
1962	12,989	360	329	31	12,629	92	81	12,140	222	94	100.0	2.8	0.7	0.6	93.5	1.7	0.7
1963	13,324	288	271	17	13,036	64	50	12,626	153	134	100.0	2.2	0.5	0.4	94.8	1.1	1.0
1964	13,071	331	312	19	12,740	73	43	12,370	155	99	100.0	2.5	0.6	0.3	94.6	1.2	0.8
1965	12,664	312	285	27	12,352	101	46	11,977	114	114	100.0	2.5	0.8	0.4	94.6	0.9	0.9
1966	12,693	234	216	18	12,459	79	26	11,978	133	243	100.0	1.8	0.6	0.2	94.4	1.0	1.9
1967	12,830	313	292	21	12,517	133	40	11,999	193	152	100.0	2.4	1.0	0.3	93.5	1.5	1.2
1968	13,637	469	430	39	13,168	262	68	12,364	238	236	100.0	3.4	1.9	0.5	90.7	1.7	1.7
1969	14,526	653	589	64	13,873	428	111	12,668	335	331	100.0	4.5	2.9	0.8	87.2	2.3	2.3
1970	15,575	831	743	88	14,744	503	188	13,519	454	80	100.0	5.3	3.2	1.2	86.8	2.9	0.5
1971	16,420	1,013	932	81	15,407	459	147	14,156	559	86	100.0	6.2	2.8	0.9	86.2	3.4	0.5
1972	15,887	906	739	167	14,981	454	260	13,522	634	111	100.0	5.7	2.9	1.6	85.1	4.0	0.7
1973	16,554	769	642	127	15,785	440	259	14,172	623	291	100.0	4.6	2.7	1.6	85.6	3.8	1.8
1974	17,693	1,065	888	177	16,628	468	319	14,873	786	182	100.0	6.0	2.6	1.8	84.1	4.4	1.0
1975	18,718	778	627	151	17,940	621	359	16,228	615	117	100.0	4.2	3.3	1.9	86.7	3.3	0.6
1976	18,355	985	794	191	17,370	855	378	15,279	679	179	100.0	5.4	4.7	2.1	83.2	3.7	1.0
1977	19,331	1,100	937	163	18,231	806	316	16,115	738	256	100.0	5.7	4.2	1.6	83.4	3.8	1.3
1978	21,008	1,125	875	250	19,883	969	390	17,209	1,072	243	100.0	5.4	4.6	1.9	81.9	5.1	1.2
1979	22,768	530	413	117	22,238	669	187	20,513	584	285	100.0	2.3	2.9	0.8	90.1	2.6	1.3
1980	23,158	539	467	72	22,619	440	139	21,406	557	77	100.0	2.3	1.9	0.6	92.4	2.4	0.3
1981	23,128	588	509	79	22,540	522	178	21,193	591	56	100.0	2.5	2.3	0.8	91.6	2.6	0.2
1982	22,824	704	618	86	22,120	511	144	20,768	585	112	100.0	3.1	2.2	0.6	91.0	2.6	0.5
1983	21,894	787	709	78	21,107	599	203	19,375	849	81	100.0	3.6	2.7	0.9	88.5	3.9	0.4
1984	21,594	1,036	923	113	20,558	739	289	18,591	884	55	100.0	4.8	3.4	1.3	86.1	4.1	0.3
1985	22,142	1,053	921	132	21,089	648	311	19,122	940	68	100.0	4.8	2.9	1.4	86.4	4.2	0.3
1986	22,199	1,185	1,024	161	21,014	889	352	18,375	1,255	143	100.0	5.3	4.0	1.6	82.8	5.7	0.6
1987	22,342	1,248	1,118	130	21,094	848	495	18,373	1,274	104	100.0	5.6	3.8	2.2	82.2	5.7	0.5
1988	22,159	1,376	1,157	219	20,784	1,074	767	17,310	1,536	97	100.0	6.2	4.8	3.5	78.1	6.9	0.4
1989	23,837	1,762	1,505	257	22,075	1,079	942	18,827	1,150	77	100.0	7.4	4.5	4.0	79.0	4.8	0.3
1990	25,457	2,267	1,889	378	23,191	1,357	1,188	19,058	1,491	97	100.0	8.9	5.3	4.7	74.9	5.9	0.4

Source: From 1960 to 1989, School Fundamental Survey, Various Years.
For 1990, Quick Report of the School Fundamental Survey, 1990.

Appendix Table C-11

Changes in Industrial Distribution of Employed Fresh Graduates from 4-Year Institutions, Both Sexes

	Total N. of Graduates	N. of Employed Graduates						% Distribution						
		Primary & Secondary Sector	Tertiary Sector					Total	Primary & Secondary Sector	Tertiary Sector				
			Services/ Transport	Trade	Bank/ Insurance	Govern-ment	Others			Services/ Transport	Trade	Bank/ Insurance	Govern-ment	Others
Humanities														
1960	13,318	3,033	5,856	2,226	842	758	603	100.0	22.8	44.0	16.7	6.3	5.7	4.5
1970	18,414	5,520	6,705	3,958	1,398	604	228	100.0	30.0	36.4	21.5	7.6	3.3	1.2
1980	33,231	5,934	16,083	6,360	1,555	2,972	327	100.0	17.9	48.4	19.1	4.7	8.9	1.0
1990	47,952	9,875	19,782	8,580	5,896	3,460	357	100.0	20.6	41.3	17.9	12.3	7.2	0.7
Social Sciences														
1960	44,843	16,240	4,524	10,647	9,102	2,634	1,696	100.0	36.2	10.1	23.7	20.3	5.9	3.8
1970	89,045	32,556	11,672	24,154	13,875	6,435	353	100.0	36.6	13.1	27.1	15.6	7.2	0.4
1980	127,902	28,963	19,478	36,428	23,077	19,055	901	100.0	22.6	15.2	28.5	18.0	14.9	0.7
1990	138,177	34,426	27,601	29,840	29,738	15,666	905	100.0	24.9	20.0	21.6	21.5	11.3	0.7
Natural Sciences														
1960	2,654	1,568	746	75	44	142	79	100.0	59.1	28.1	2.8	1.7	5.4	3.0
1970	5,016	3,095	1,243	307	126	183	62	100.0	61.7	24.8	6.1	2.5	3.6	1.2
1980	7,590	2,413	3,645	586	182	623	141	100.0	31.8	48.0	7.7	2.4	8.2	1.9
1990	9,252	4,217	3,455	326	600	397	258	100.0	45.6	37.3	3.5	6.5	4.3	2.8
Engineering														
1960	15,462	13,471	771	529	103	382	204	100.0	87.1	5.0	3.4	0.7	2.5	1.3
1970	41,983	36,231	1,835	1,911	316	1,414	276	100.0	86.3	4.4	4.6	0.8	3.4	0.7
1980	62,131	44,659	6,843	5,322	558	4,207	542	100.0	71.9	11.0	8.6	0.9	6.8	0.9
1990	65,016	47,395	10,248	2,330	1,797	2,910	335	100.0	72.9	15.8	3.6	2.8	4.5	0.5
Health-Related														
1960	2,928	968	1,520	325	0	84	31	100.0	33.1	51.9	11.1	0.0	2.9	1.1
1970	5,420	2,196	2,657	319	2	230	16	100.0	40.5	49.0	5.9	0.0	4.2	0.3
1980	8,362	1,845	5,605	571	0	256	85	100.0	22.1	67.0	6.8	0.0	3.1	1.0
1990	9,802	3,555	5,155	742	73	259	18	100.0	36.3	52.6	7.6	0.7	2.6	0.2
Education														
1960	12,696	235	12,113	70	59	171	48	100.0	1.9	95.4	0.6	0.5	1.3	0.4
1970	15,575	831	13,519	503	188	454	80	100.0	5.3	86.8	3.2	1.2	2.9	0.5
1980	23,158	539	21,406	440	139	557	77	100.0	2.3	92.4	1.9	0.6	2.4	0.3
1990	25,457	2,267	19,058	1,357	1,188	1,491	97	100.0	8.9	74.9	5.3	4.7	5.9	0.4

Source: From 1960 to 1989, School Fundamental Survey, Various Years.
For 1990, Quick Report of the School Fundamental Survey, 1990.

Appendix Table C-12

Factor Decomposition Analysis of the Increase in Employed Higher Education Graduates, Male 1960-1988

Industrial Sector	Period	Increase in Employment (thds)			
		Total	of which due to		
			Industrial Structure	Education Structure	Inter-action
All Industries	1960 - 1970	1,884	924	719	241
	1970 - 1980	2,763	918	1,593	252
	1977 - 1982	1,799	463	1,268	68
	1982 - 1988	1,525	522	961	42
Primary Sector	1960 - 1970	13	-18	45	-14
	1970 - 1980	28	-23	76	-25
	1977 - 1982	28	-9	42	-5
	1982 - 1988	20	-10	34	-3
Secondary Sector	1960 - 1970	613	248	268	96
	1970 - 1980	693	50	614	30
	1977 - 1982	536	14	516	6
	1982 - 1988	407	59	340	8
Tertiary Sector	1960 - 1970	1,259	695	405	159
	1970 - 1980	2,041	891	903	247
	1977 - 1982	1,235	458	710	67
	1982 - 1988	1,098	473	587	38
Manufacturing	1960 - 1970	482	199	208	74
	1970 - 1980	402	-39	459	-17
	1977 - 1982	344	-26	378	-7
	1982 - 1988	294	47	240	7
Trade	1960 - 1970	478	143	243	92
	1970 - 1980	718	233	381	104
	1977 - 1982	384	66	302	16
	1982 - 1988	256	20	233	3
Bank/ Insurance	1960 - 1970	118	76	28	14
	1970 - 1980	221	115	74	32
	1977 - 1982	121	70	44	7
	1982 - 1988	131	81	44	6
Services	1960 - 1970	515	365	104	46
	1970 - 1980	797	478	235	84
	1977 - 1982	557	287	232	38
	1982 - 1988	608	391	186	31
Government	1960 - 1970	75	42	27	5
	1970 - 1980	196	43	132	20
	1977 - 1982	94	26	65	4
	1982 - 1988	63	-18	83	-3

Data: 1960, 1970, 1980, Census.
1977, 1982, 1988, Labor Force Survey.

Appendix Table C-13

Factor Decomposition Analysis of the Increase in Employed Higher Education Graduates, Female 1960-1988

Industrial Sector	Period	Increase in Employment (thds)			
		Total	of which due to		
			Industrial Structure	Education Structure	Interaction
All Industries	1960 - 1970	749	192	371	186
	1970 - 1980	1,553	324	976	253
	1977 - 1982	1,262	405	717	140
	1982 - 1988	1,139	332	741	66
Primary Sector	1960 - 1970	11	-5	22	-6
	1970 - 1980	6	-14	35	-16
	1977 - 1982	15	-4	21	-3
	1982 - 1988	6	-6	14	-2
Secondary Sector	1960 - 1970	110	18	60	32
	1970 - 1980	177	10	156	11
	1977 - 1982	188	39	128	21
	1982 - 1988	193	15	172	6
Tertiary Sector	1960 - 1970	629	180	289	160
	1970 - 1980	1,370	328	784	258
	1977 - 1982	1,059	370	567	122
	1982 - 1988	940	323	555	62
Manufacturing	1960 - 1970	93	17	49	27
	1970 - 1980	131	-2	134	-2
	1977 - 1982	147	27	105	14
	1982 - 1988	164	12	146	5
Trade	1960 - 1970	169	30	88	51
	1970 - 1980	327	58	213	56
	1977 - 1982	229	54	152	23
	1982 - 1988	229	42	175	12
Bank/ Insurance	1960 - 1970	39	10	13	16
	1970 - 1980	96	25	47	24
	1977 - 1982	80	23	47	10
	1982 - 1988	120	28	80	12
Services	1960 - 1970	386	130	171	85
	1970 - 1980	861	235	460	166
	1977 - 1982	686	186	316	84
	1982 - 1988	554	251	265	38
Government	1960 - 1970	22	7	9	6
	1970 - 1980	55	10	35	11
	1977 - 1982	34	5	27	2
	1982 - 1988	19	-4	25	-1

Data: 1960, 1970, 1980, Census.
1977, 1982, 1988, Labor Force Survey.

NORVÈGE

NORWAY

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in Research and Higher Education

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I. INTRODUCTION

This report follows the guidelines drawn up by the OECD secretariat in the document: "The flow of graduates from higher education and their entry into working life" (SME/ET/89.16 1st Rev.), and the discussions at the meeting in Paris 11th-12th December 1989. However, a number of adjustments had to be done because of the data available.

The report is divided into two main parts: first, a description of the development of higher education (chapter II and III), recruitment patterns, student numbers and graduates. Second, a description of the development in labour market conditions during the same period (chapter IV and V). This second part concentrates on the situation half a year after graduation, since we do not have regular studies following up the graduates over a longer period.

While the graduates from higher education during the 1970s and most of the 1980s met very few problems in finding work, the situation worsened at the end of the 80s. In some groups of graduates, but not all, 10 to 15 per cent of the graduates did not find employment the first half year after graduation. At the same time, recruitment to higher education is higher than ever before. The crucial question then is: Are the problems a result of a long-term trend of "over-education" or just a reflection of a temporary downward economic trend? In the concluding chapter of the report we will discuss this, but a definite answer cannot be given yet.

The data for this project come mainly from two different sources, the official educational statistics prepared by the Central Bureau of Statistics, and the graduate surveys done by the Institute for Studies in Research and Higher Education in Oslo.

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II. GENERAL

The System of Higher Education in Norway

Norway has two sectors of higher education: the university sector consisting of four universities and eight specialized institutions in fields like business administration, agriculture, veterinary medicine, architecture, music, etc., and the non-university or college sector, made up of regional colleges and colleges specialising in a particular field, e.g. nursing, social work, teacher training and engineering.

The regional colleges were established as new institutions during the 70s and 80s, while the rest of the institutions in the college sector (teacher training colleges, nursing colleges, colleges of engineering, etc.) are typically older and specialized colleges upgraded to higher education institutions after 1970.

University programs in the professions (theology, law, medicine, dentistry, etc.) typically take 5-7 years, while the specialized institutions of university status offer programs which last 4 to 5 years in engineering, business administration, etc. In humanities and social sciences, universities offer studies at two different levels. The lower level (cand. mag.) is normally composed of a preparatory course in the history of philosophy and logic (1/2 year), two subsidiary courses (grunnfag) (1 year each), and a minor course (1/2 year). A higher degree (master's) is composed of a lower degree + a main course (hovedfag) which lasts for a minimum of 2 years. Studies in natural sciences and mathematics are similar to those in humanities and social sciences, but a lower degree is built up by a credit system - 10 credits per half year. A higher degree always includes a thesis.

The professional studies are normally rather strictly regulated, while students in humanities, social sciences and natural sciences are free to chose subjects. Many students do not intend to take a degree, but only one or two subjects, often part-time.

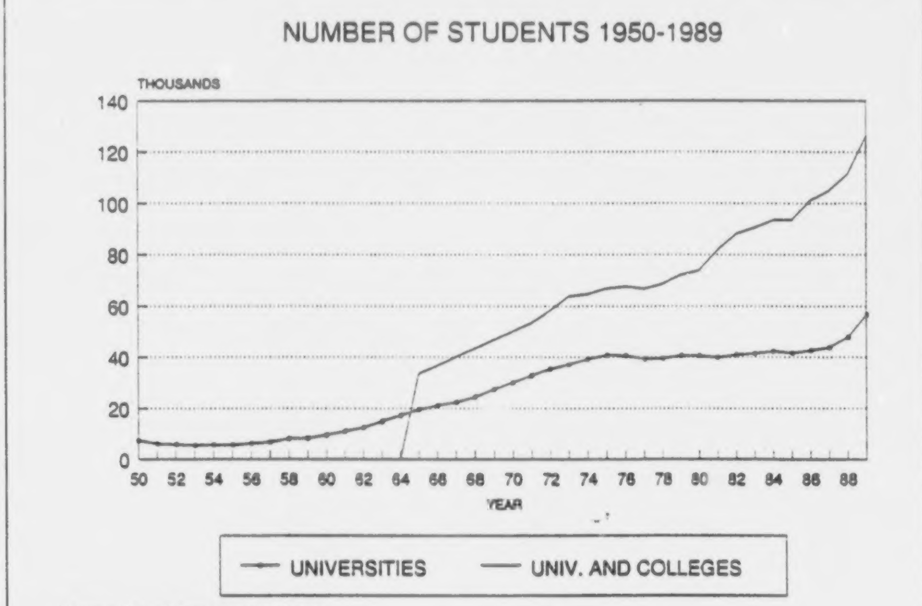
The typical length of study in the non-university sector is 2 to 3 years. These studies are normally vocationally-oriented, but they may also be integrated in a university degree. Many students, therefore, move between different institutions and sectors. The lower degree (cand. mag.) may be granted by colleges as well.

Generally, the prerequisite for admittance to higher education is the completion of three years secondary school. For university matriculation, students are normally required to have completed the academic, or general, stream of secondary school, but in some cases they may take other streams in conjunction with certain subjects from the academic stream. Age and occupational experience can also give admittance on an individual assessment.

Some fields have open admission, but in general admission is competitive. Secondary school grades are normally the basis for selection, but in some cases work experience gives extra credit.

Expansion in Higher Education 1950 - 1989

As in many other industrialized countries, the development towards mass higher education started in Norway about 1960.



Source: Central Bureau of Statistics, Educational Statistics.

Figure 1

In the mid-fifties the number of university students was about five and a half thousand, until 1960 the number had risen to about 10 000. During the next three five-year periods it multiplied by two, three and four, to 20 000, 30 000 and 40 000. Then, in the mid-seventies the growth stopped, and the number of university students remained stable for almost 15 years. The reason for this is obvious, as in most other countries, the development towards mass higher education created a new sector of higher education outside the universities. This sector was created partly by upgrading already existing schools for teacher training, engineering and nurses training, but also by introducing new types of institutions, the regional colleges.

This sector was formally a part of higher education at the end of the sixties, but some schools were not upgraded until 1981 and 1982.

From 1974 to 1987, all expansion in higher education took place in the non-university sector, not only in terms of student numbers, but also in terms of resources. But after 1987 growth in the number of university students was again very strong, from about 44 000 to 57 000, or 30 per cent. In the autumn term of 1990, the figure has probably passed 60 000 in spite of the introduction of numerus clausus in most studies. That means that the number of university students is now almost 50 per cent higher than it was during the period 1975 - 1985. The figures for the non-university sector have also increased, from 61 000 in 1987 to 70 000 in 1989. Today the total number of students probably has passed 130 000.

The growing demand for higher education is of course connected to a very high unemployment rate in Norway since 1988, but we think there are also reasons to believe that the proportion of the age groups recruited to higher education is growing at a more continuous rate. One reason for this is that there may be a "generation lag". Children having parents with higher education are more often recruited to universities than those having parents with lower education. Children normally want to get at least as much education as their parents did, and those who studied in the expansion era of the sixties now have children of student age. Today's youth are in a sense the children of the educational explosion. There are, in fact, about 30 years between the start of the educational expansion in the sixties and the dramatic rise in university students at the end of the 1980s.

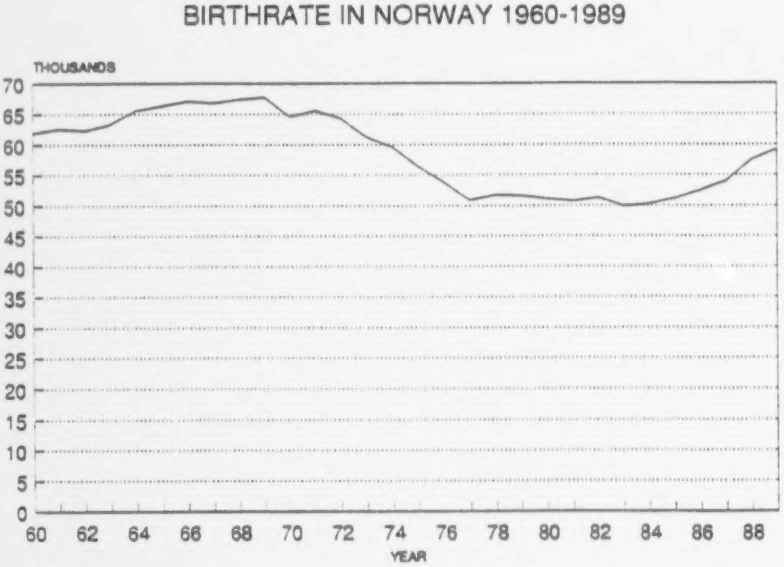
The development of the student population since 1975, with a stagnation at universities and expansion in the non-university sector was very much in line with political priorities. Short-term, vocationally-oriented higher education was prioritized, and also demanded by the labour market. Especially fields like business administration and technology were to be expanded, much of the expansion took place in private institutions. Another important factor was the weight on geographical decentralization of higher education which favoured the regional colleges.

During the second half of the 1980s, it became clear that these developments had to be given new directions. It became necessary to expand recruitment to long-term, research-oriented university studies. The priority of fields like business administration and technology perhaps had gone too far, with a lack of personnel within education and health services as a possible result. A report from the Royal Commission on Higher Education (the Hernes Commission) put a new focus on the universities in many ways. But from 1988 on, there have been no reasons to worry about a shortage of university entrants, and the applications for teacher training and preschool teacher training have also grown dramatically. It remains, however, to be seen if this is a permanent tendency or only a temporary reflection of high unemployment.

The development during the last 30 years, with first an expansion and then stagnation, also affects the "internal demography" of the universities. During the 1960s and until the mid 70s, the universities were given many new positions to handle the growing numbers of students. But after 1974 they were given very few new positions, and few newcomers. The faculty appointed in the period of expansion are aging, and a great proportion have to be replaced during a short period of time in a few years. The realization of this problem has made it necessary to expand research training.

Demographic trends

Recruitment to secondary and higher education is, of course, very much affected by the long-term demographic development. The number of births was very high the first years after the Second World War, the 1946 cohort is the biggest in Norway with more than 70 000. The birthrate then fell, but remained rather stable between 62 000 and 65 000 for 15 years.



Source: Central Bureau of Statistics, Population Statistics.

Figure 2

The birthrates from 1960 to 1989 are shown in figure 2. The numbers rose somewhat in the second half of the 1960s, and culminated in 1969 with more than 67 000. During less than a decade, from 1970 to 1977 the numbers dropped dramatically to 51 000, that is by 25 per cent. After 1986 the birthrate started to climb again.

One very often refers to the big postwar birthrate. A more correct description is that the numbers have remained high and stable for more than 25 years after 1946.

Normally young people are ready to attain higher education at the age of 19. The number of 19-year-old persons thus was greatest in 1988, but it will decline from 1990 to 1996. However, the effects on recruitment to higher education will not be seen immediately, because a high proportion of the newcomers wait one or more years before they start, and since such a high proportion of the student body is older than 24 and even older than 29. The age group 20-24 is the largest at the moment, and in the year 2005 it will be reduced by more than 80 000.

Even if demographic development is an important factor, there is no reason to believe that recruitment to higher education will follow these demographic trends. Both the strong growth in student numbers in Norway the last two years, and experiences from other countries (e.g. Germany) should keep us from "demographic determinism".

School leavers and entrance into higher education

Traditionally, the prerequisite for entrance to higher education was the three years' general stream from upper secondary school, the "examen artium". Admission possibilities have become broader, and today three years' commercial subjects and economic subjects also give general admission, as well as other more specific prerequisites. Thus it is not possible to calculate the exact number of people with the prerequisites for entrance to higher education, but if we include the general and the commercial streams, we have covered the dominant areas.

In 1976 most secondary education was organized within one type of school, and since then there has been considerable expansion. The proportion of school leavers from basic school (at the age of 16) going directly to upper secondary education increased from 81 per cent in 1980 to 90 per cent in 1988. The proportion of the age group 16-18 attending upper secondary education increased from 62 per cent in 1977 to 76 per cent in 1988. The expansion, however, mainly took place within the vocational branches, while the general stream has been rather stable.

Table 1: School leavers from general and commercial branches, and as a percentage of the age group. 1980 - 1988.

Year	Total	General branch	Commercial branch	Number of 19-year-olds	Percentage of age group
1980	26 143	24 259	1 884	60 963	42.9
1981	26 609	24 149	2 460	61 576	43.2
1982	25 972	22 771	3 201	61 606	42.2
1983	26 872	23 100	3 772	63 021	42.6
1984	29 135	23 979	5 156	65 271	44.6
1985	29 736	23 568	6 168	66 002	45.1
1986	31 255	24 044	7 211	66 980	46.7
1987	31 454	23 757	7 697	66 847	47.1
1988	30 970	22 925	8 045	68 329	45.3

Source: Central Bureau of Statistics, Educational Statistics.

The number of graduates from upper secondary schools who are possible entrants to higher education has increased by 18 per cent during the 1980s, and this increase is due to the commercial and clerical branches. The number of school leavers from the general (academic) branch has gone down slightly. The increase is of course very much due to a strong growth in the age group during the decade, from 61 000 to 68 000 or 12 per cent. But as shown in table 1 the number of school leavers as a percentage of the age group has also gone up. The proportion of school leavers going on to higher education is highest among school leavers from the general branch, and that means that the real recruitment basis for higher education has not increased very much.

What about the proportion of school leavers from upper secondary schools going on to higher education? This percentage cannot easily be calculated in Norway because a great proportion of those who start studying wait for one year or more after finishing upper secondary school.

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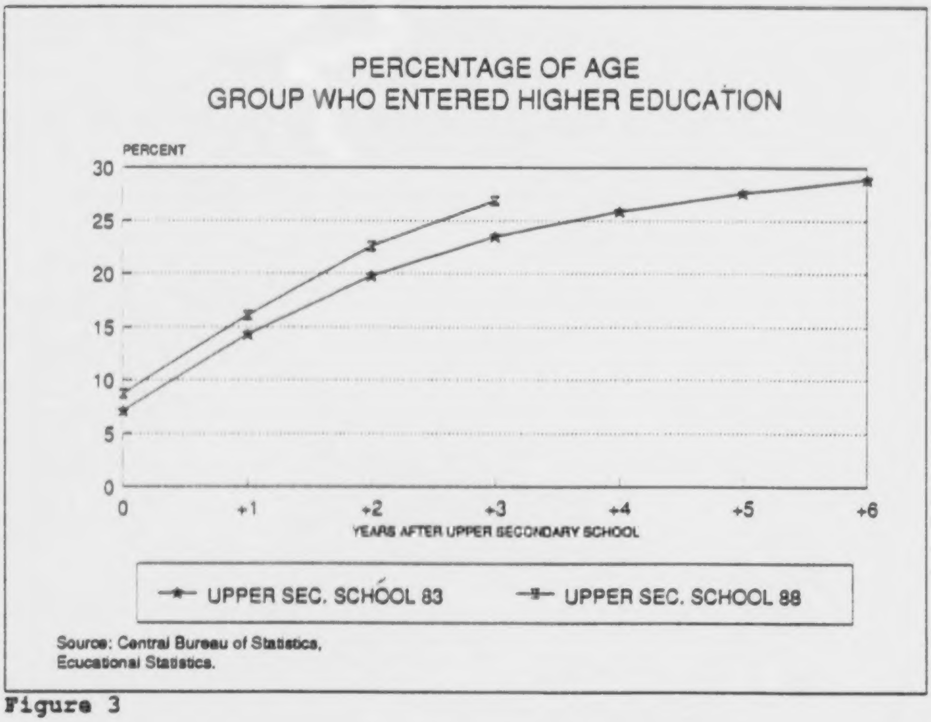
Table 2: Percentage of school leavers from upper secondary schools who continue in higher education the same year 1975 - 1989.

Year	Total	Univ.	Colleges	Males	Females
1975	26	18	8	27	24
1977	23	14	9	24	22
1979	21	13	8	21	21
1981	16	10	6	16	17
1983	20	12	8	19	20
1985	20	11	9	21	20
1987	22	12	10	21	23
1989	33	20	13	34	33

Source: Central Bureau of Statistics, Educational Statistics.

In the second half of the 1970s the percentage of school leavers continuing from upper secondary schools to higher education the same year dropped considerably. The reduction was mainly within the university sector. With the exception of 1981, the rate has been very stable from 1977 to 1987. But in 1989 the percentage has grown to a level much higher than ever before, and it is recruitment to the universities that has changed most. This development is in line with the growth in the total student population. A higher percentage of the age group going to higher education is indicated, but to give a definite answer, one has to follow up the age groups for at least five years.

Figure 3 shows the results of a follow-up study of two age cohorts, primary school leavers from 1980 and 1983. Normally these school leavers can attain higher education after three further years of school, that is earliest in 1983 or 1986 respectively. But a small number have postponed their upper secondary schooling, or use more than three years before they obtain the qualifications to go on to higher education. Nevertheless, we will designate these as upper secondary school leavers, 1983 and 1986. The curves show that only a small proportion of the age groups start their studies directly (7.1 and 8.7 per cent), but after six years almost 30 per cent of the 1983 school leavers were registered in higher education. The figure also indicates that the proportion of the age group attaining higher education is rapidly growing. The figures for the 1986 school leavers are considerably higher than for the 1983 school leavers. After 3 years the difference is 3.4 per cent, and the proportion will probably pass 30 per cent within two or three years. We have not calculated the figures for the last possible cohort, the 1986 primary school leavers, but the corresponding figures are probably between 12 and 13 per cent. Time will show whether this is only a result of earlier study start or a growth



Source: Central Bureau of Statistics,
Ecucational Statistics.

Figure 3

in the total study attainment rate. To compensate for the reduction in the age groups, the percentage of the age group recruited to higher education should increase from about 30 to about 37 per cent.

III. OUTPUT OF HIGHER EDUCATION

Flow of students, dropout and part-time students

It is not possible to give a precise description of the inflow of new students or of the flow of students through higher education in Norway. The reason for this is partly a lack of statistical data, but it is also a reflection of how the system is constructed. In many university courses, study progression is very much an individual matter. Many students are not aiming for a degree, and transfer between institutions is usual. To calculate dropout from this system, it is necessary to take the goals of the individual students into account. Many students studying only single subjects at universities have completed a degree, for instance teacher training.

An important tendency in Norwegian higher education is an aging student population. Almost half of the students are older than 24, and more than 20 per cent are 30 or older. There are many reasons for this. Only a small proportion of the graduates from upper secondary schools continue to higher education the same year. A great number postpone their education for one or more years, the mean age of new university students is 23. About 40 per cent of the students report that they have interrupted their study for at least one semester, and more than one third have had slower study progression than normal. Last, but not least, a considerable number of students are occupied with recurrent education, but are registered as ordinary students.

In Norway there are no permanent statistics showing study progression or dropout. But single follow-up studies may give some indications of the situation.

The problem of dropout and slow study progression is mainly a problem within the long-term liberally organized university studies in humanities and social sciences, to some extent also in natural sciences and mathematics. A study carried out by the Institute for Studies in Research and Higher Education in 1984 showed that only 54 per cent of the university students had followed the normal study progression. In humanities and social sciences the figures were 38 and 42 per cent respectively, in natural sciences 46, and in technology 90 per cent. In the same survey, 41 per cent of the students reported that they have had a break in their studies of at least one semester during the course of their studies. This percentage was 59 in social sciences, 55 in humanities, 35 in natural sciences and 9 in technology.

A study of new university students in 1980 followed up to 1988 showed that about 53 per cent had obtained a lower degree, and about 1/3 a higher degree. About 20 per cent took no exams at all. It should also be mentioned that between 15 and 20 per cent of the university students only intend to take exams in single subjects.

No final conclusions should be drawn from this preliminary study based on one single cohort, but there are clear indications that the effectiveness of Norwegian university studies is not high enough. It seems that too many students do not complete their studies, and that those who do often use much more time than normal. But there is great variation between the different types of study. In studies like, e.g, engineering, more than 90 per cent complete their studies within the prescribed time.

These figures also have another interesting implication. The large number of persons who have attained higher education at an earlier stage completing only parts of a degree represents a considerable reservoir. There will of course always be a certain number of students going in and out. But in a situation with worsened working possibilities the amount of such "half-way" students coming back may increase. Therefore, the strong increase in the number of university students since 1988 does not only consist of first year students. Also the number of graduate students may increase momentarily, and not as one should expect - after about four years.

As a result of both postponed study start and slow study progression, the graduates are older.

Table 3: Average age of graduates with higher degrees in Norway, 1970 and 1987.

Field of study	1970	1987
Humanities	29.4	35.1
Theology	26.5	29.1
Social sciences	27.9	30.4
Law	27.0	28.8
Science	27.9	28.5
Technology	25.2	25.2
Medicine	27.2	29.6
Total	26.8	28.3

Source: Lisbet Berg: Studieløpet, report 11/90, Institute for Studies in Research and Higher Education.

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Graduates from different sectors and levels

In this section we shall present some figures on a relatively aggregated level of graduates from different types of schools and levels of education. University degrees are divided into lower and higher degrees, while college degrees are presented together. They may take from 2 to 3 years. Shorter programmes are not included in the figures.

Table 4: Number of graduates by type of institution. 1979/80 - 1987/88.

Institution	79/80	80/81	81/82	82/83	83/84	84/85	85/86	86/87	87/88
Universities, lower degree	1 348	1 300	1 386	1 539	1 467	1 304	1 315	1 316	1 201
Universities, higher degree	3 466	3 481	3 663	3 552	3 421	3 479	3 454	3 371	3 490
Regional colleges	721	893	957	1 117	1 216	1 419	1 459	1 636	1 515
Colleges of education	2 459	2 600	2 604	2 656	2 653	2 517	2 078	1 810	1 623
Colleges of engineering	2 045	2 017	2 059	2 020	2 029	2 152	2 255	1 751	1 986
Colleges of social work	341	431	424	375	399	283	233	371	368
Colleges of health education	2 253	2 235	2 801	2 415	2 890	2 433	2 452	2 420	2 154
Other colleges of higher education	930	1 066	1 077	1 419	1 465	2 117	1 689	1 633	2 045
Total	13 563	14 023	14 971	15 093	15 540	15 704	14 9352	14 353	14 382
Percentage of age group:	22.3	22.9	24.2	24.3	24.9	25.1	23.9	22.9	22.7

Source: Central Bureau of Statistics, Educational Statistics.

The table shows that the total number of graduates from higher education has not varied much during the 1980s. It must be remembered, however, that there had been a strong increase during the previous decade. The total number increased from about 13 500 in 1979-80 to 15 700 in 1984-85, and then decreased again to 14 400 in 1987-88. The number of university graduates is very stable, even if there was a decrease in lower degrees last year. The number of college degrees increased until 1984-85, and then decreased, but its proportion of the total number of degrees increased from 64.5 to 67.3 per cent.

We have also calculated the total number of graduates as a percentage of the age group. It must be remembered that the graduates are distributed over a large range of age cohorts, but we have related the number to the mean of the age group 25-29. It must also be noted that these figures are not net figures, many of the graduates with a lower degree or a college degree will go on further to a higher degree.

It is hardly surprising that the number of university degrees is stable, since the total number of university students remained at the same level from 1975 to 1986. But one should perhaps have expected the number of college degrees to have increased much more, after all the number of students has increased by more than 50 per cent. There are two main reasons for this. First, much of the growth in the number of students is due to a growing number of part-time students with a lower graduation rate than full-time students. The increase in part-time students will mainly be found in colleges of education and in "other colleges". Second, our tables on graduates also underestimate the total number of exams, while we include only degrees that can be classified as "final", and with a normal duration of at least one year. A growing number of short-term courses are not included in our figures.

Graduates from different fields of study

Before presenting the figures on graduates, we will take a look at developments in the student body distributed by field of study. The classification by field follows the Norwegian Standard Classification of Education, which follows the principles of the ISCED Classification.

From 1981 to 1988 the total number of students increased from 81 600 to 111 600, or 36.8 per cent. The figure for 1989 is 126 600, but we still do not have the distribution by field of study for this year. All the increase from 1981 to 1988 is due to certain fields: business administration, social and behaviourial sciences and law, trades, crafts, natural science and engineering. The rest of the fields have had only a small increase or even decrease. The increase has been especially strong within business administration, social and behaviourial

Table 5: Students by field of study. 1981 - 1988.

Field	1981	1982	1983	1984	1985	1986	1987	1988
Humanities	11 057	10 589	9 970	9 686	8 816	9 753	10 521	11 291
Education	15 657	15 308	14 635	15 041	13 987	14 010	15 106	14 297
Social sciences, administration and law	18 370	24 143	26 679	28 890	23 808	37 911	37 027	40 460
Natural sciences, mathematics and engineering	18 638	19 770	20 462	21 557	22 072	23 270	23 702	24 742
Health care	11 011	11 150	11 264	11 129	11 027	11 074	11 893	12 390
Agriculture, forestry and fishery	922	906	903	885	950	994	1 007	1 095
Other and unspecified	5 951	6 142	6 468	6 349	6 899	6 099	5 758	7 332
Total	81 806	88 008	90 381	93 535	87 559	103 111	105 014	111 605
Humanities, %	13.5	12.0	11.0	10.4	10.1	9.5	10.0	10.1
Education, %	19.1	17.4	16.2	16.1	16.0	13.6	14.4	12.8
Social sciences, administration, and law, %	22.5	27.4	29.5	30.9	27.2	36.8	35.3	36.3
Natural sciences, mathematics, and eng., %	22.8	22.5	22.6	23.5	25.2	22.6	22.6	22.2
Health care, %	13.5	12.7	12.5	11.9	12.6	10.7	11.3	11.1
Agriculture, forestry and fishery, %	1.1	.0	1.0	.9	1.1	.0	1.0	9.8
Other and unspecified, %	7.3	7.0	7.2	6.8	7.9	5.9	5.5	6.6

Source: Central Bureau of Statistics, Educational Statistics.

sciences and law, where the number of students has more than doubled. This is now by far the biggest field with 35 per cent of the students. However, a great many of these students are part-time students. Growth has mainly been in the business administration sector. Humanities and related programmes had a strong decrease up to 1986, but the figures are now going up again.

Table 6: Graduates by type of degree and field of study. 1979/80 - 1987/88.

University higher degree	79/80		81/82		83/84		85/86		86/87		87/88	
	Graduates	Percent	Graduates	Percent	Graduates	Percent	Graduates	Percent	Graduates	Percent	Graduates	Percent
Humanities	514	14.4	469	12.8	376	10.6	290	8.0	272	7.8	290	7.6
Social science	319	9.0	326	8.9	324	9.1	362	10.0	451	13.0	351	9.2
Law	390	10.9	378	10.3	350	9.9	365	10.0	297	8.5	400	10.5
Economics and business adm.	348	9.8	291	7.9	366	10.3	437	12.0	405	11.6	641	16.8
Natural science and techn.	1 167	32.7	1 298	35.4	1 250	35.3	1 375	37.8	1 317	37.8	1 299	34.0
Health care	618	17.3	657	17.9	631	17.8	574	15.8	534	15.3	609	15.9
Other	208	5.8	246	6.7	246	6.9	235	6.5	211	6.1	235	6.1
Total	3 564	100.0	3 665	100.0	3 543	100.0	3 638	100.0	3 487	100.0	3 825	100.0

University lower degree	79/80		81/82		83/84		85/86		86/87		87/88	
	Graduates	Percent	Graduates	Percent	Graduates	Percent	Graduates	Percent	Graduates	Percent	Graduates	Percent
Humanities	735	54.5	769	55.5	599	40.8	450	34.2	416	30.6	389	32.4
Social sciences	147	10.9	200	14.4	289	19.7	272	20.7	276	20.3	231	19.2
Natural science and technology	430	31.9	361	26.0	478	32.6	488	37.1	538	39.5	433	36.0
Other	36	2.7	56	4.0	101	6.9	105	8.0	131	9.6	148	12.3
Total	1 348	100.0	1 386	100.0	1 467	100.0	1 315	100.0	1 361	100.0	1 201	100.0

Regional Colleges	79/80		81/82		83/84		85/86		86/87		87/88	
	Graduates	Percent	Graduates	Percent	Graduates	Percent	Graduates	Percent	Graduates	Percent	Graduates	Percent
Humanities	436	5.0	626	6.3	550	5.2	587	5.9	553	5.8	460	4.9
Economics and business adm.	677	7.8	864	8.7	1075	10.2	1286	12.9	1409	14.8	1493	16.0
Natural science and techn.	2 222	25.7	2 258	22.8	2 450	23.3	2 747	27.5	2 364	24.9	2 449	26.2
Education	2 427	28.1	2 585	26.1	2 635	25.0	2 060	20.6	1 819	19.1	657	17.7
Health care	2 285	26.4	2 881	29.0	2 962	28.1	2 517	25.2	450	25.8	2 154	23.0
Other	604	7.0	706	7.1	858	8.1	785	7.9	910	9.6	1 143	12.2
Total	8 651	100.0	9 920	100.0	10 530	100.0	9 982	100.0	9 505	100.0	9 356	100.0

Source: Central Bureau of Statistics, Educational Statistics.

In these tables the degrees are classified as higher university degrees, lower university degrees and college degrees. Some degrees offered in the college sector are recognized as comparable to higher university degrees, e.g in theology and business administration. Therefore the figures differ somewhat from the figures in table 4.

The most striking result is the decrease in the number of graduates in humanities and the increase in business administration. In the beginning of the decade, the number of graduates in humanities, lower university degrees, was about 750, or 55 per cent of all lower degree graduates. In 1987-88 the number was halved, and the proportion was reduced to less than one third. We see the same development for the higher degree levels, numbers declined from about 500 to less than 300, and the proportion from 14 to 8 per cent. The number of college degrees in humanities has, however, remained rather stable.

The number of graduates in business administration has increased very much during the 1980s, both in the college sector and in the university sector. This development was clearly intended by the Government, because of a lack of personnel with these types of qualifications. The capacity in existing curricula was expanded, and new ones were created. The expansion has been especially strong in the private sector. If we add the number of higher university degrees and the number of college degrees, the total number increases from 1 025 in 1979-80 to 2 134 in 1987-88. It must also be pointed out that many Norwegians study business administration at foreign universities, especially in Switzerland and the United States. We don't have the exact figures on degrees obtained abroad, but there have been at least as many as in Norway. Most of the Norwegians graduating abroad are probably working in Norway.

In fields other than humanities and business administration the figures have been more stable. The number of lower level university degrees in social sciences increased greatly in the early eighties, but at a higher level the figures are rather stable. The number of law students increased rapidly in the middle of the 1980s because the Faculty of Law at the University of Oslo at that time was the only faculty besides Theology without admission regulations. It was therefore expected that many of the new students were less motivated in studying law, and would perhaps drop out. For a long time the number of graduates did not increase, but from 1986-87 to 1987-88 the number of graduates increased by 35 per cent, or about at the same level as did the number of students five to six years earlier. There are, however, often considerable variations in the number of graduates from one year to another, so we have to wait a couple of years before we can conclude that the increasing figures are not only random variations.

Professional or general education

The term "professional education" may be defined in many different ways. The way we have used it here, it merely means that the education is more vocationally- than disciplinary-oriented.

Table 7: Graduates by professional and academic type of degree and type of institution. 1979/80 - 1987/88.

	78/79	Fe-males	Pct. fe-males	83/84	Fe-males	Pct. fe-males	87/88	Fe-males	Pct. fe-males
Professionals									
Universities	2 689	565	21.0	2 709	701	25.9	2 773	1036	37.4
Colleges	8 624	4 636	53.8	10 476	6 318	60.3	9 517	5261	59.1
Generalists									
Universities	2 125	680	32.0	2 179	933	42.8	1 918	882	46.0
Colleges	125	56	44.8	176	101	57.4	174	103	59.2

Source: Central Bureau of Statistics, Educational Statistics.

The college sector has almost entirely professionally-oriented studies, while some big university studies like humanities and science are classified as general studies. There has been a slight decrease in the number of graduates from general studies, but the changes are small. The proportion of the total number of graduates classified as professional increased from 83.4 per cent in 1979-80 to 85.5 per cent in 1987-88. One can therefore say that Norwegian higher education has become more professionally oriented, but to a very moderate degree. This is perhaps surprising. Educational policy has been towards stronger vocationalism during this period, but the effects measured in terms of numbers of graduates are limited. It must, however, be remembered that we have commented on the growth of graduates in the college sector. Not all the growth is reflected in table 7, therefore the degree of professionalization is underestimated.

Males and females

During the 1970s and the 80s the influx of females into higher education has increased very much. The proportion of female students in higher education as a whole increased from 30 per cent in 1970, to 49 per cent in 1981 and 54 per cent in 1988. Within the university sector, the corresponding figures were 29, 42 and 50 per cent. During the first phase of this development women were recruited mostly to fields of study that had a rather high proportion of females already. But during the 1980s it seems that more women are entering male-dominated fields. Women are now equally represented in fields like medicine, law, architecture and dentistry. About one-third of the students in business administration and the natural sciences are women. In technology the proportion of females has also increased rapidly, and is now about 25 per cent. But here developments seem to have stagnated at the moment, so there are still great differences between fields. And while many women have entered male-dominated fields, the opposite has not happened at all. Female-dominated fields like nursery and preschool teacher training are even more female-dominated today than ten years ago.

Even if this development in higher education may be characterized as feminisation, fewer women than men graduate with higher degrees. Let us therefore have a look at how the proportion of females at the different levels has changed during the 1980s.

Table 8: Percentage of females among graduates by type of degree 1980 - 1988.

	Type of degree		
Year	Colleges	Lower univ.	Higher univ.
1979-80	64.5	34.7	21.8
1980-81	65.9	42.7	23.0
1981-82	66.3	45.0	24.2
1982-83	66.3	44.1	26.2
1983-84	68.5	48.4	27.0
1984-85	69.5	47.7	31.5
1985-86	68.1	46.5	32.6
1986-87	67.0	45.5	34.2
1987-88	67.3	51.5	37.2

Source: Central Bureau of Statistics, Educational Statistics.

The table shows three main features: 1) The proportion of females is highest at the lowest level of degrees and lowest at the highest level. 2) The proportion of females has increased considerably over these years. 3) This development is strongest within the university sector, while there has been only a slight increase within the college sector.

Before we go on to discuss these figures further, some information about the connection between these three types of degrees ought to be mentioned. The college type degree normally is a final vocationally-oriented diploma, and even if many students put together diplomas from both universities and colleges, the main purpose of the college degrees is not to serve as a basis for further studies at universities towards a lower or a higher degree. There is therefore no reason to expect that a certain development in the proportion of females at the college degree level will automatically appear some years later at the university degree level. This is of course different when comparing the developments at lower and higher university degree levels, even if some university studies are not divided into a lower and a higher degree (e.g. medicine, law, agriculture, engineering). But even if one uses a time lag (it normally should take two to three years of study to progress from a lower to higher degree), the proportion of females is lower than expected at the higher level. This is a clear indication that women still are not studying towards higher level degrees to the same extent as men. However, it is not possible to analyze these matters at such an aggregated level. To know whether this is a result of lower ambitions (?) or higher dropout among females, studies must be done at a more detailed level, and even by following individual study careers.

Table 9: Females as a percentage of all graduates and female graduates by field. 1979-1980 - 1987-1988.

University higher degree	**79/80**		**81/82**		**83/84**		**85/86**		**86/87**		**87/88**	
	Pct. fem.	Pct. by field	Pct. fem.	Pct. by field	Pct. fem.	Pct. by field	Pct. fem.	Pct. by field	Pct. fem.	Pct. by field	Pct. fem.	Pct. by field
Humanities	38.3	23.6	37.1	19.6	38.9	15.8	42.9	10.8	46.2	10.8	44.2	9.5
Social science	32.9	12.6	32.5	12.0	38.9	13.2	47.5	14.7	46.3	17.7	47.9	11.9
Law	21.3	9.9	28.8	12.3	31.4	11.5	35.9	11.2	36.7	9.2	47.0	13.3
Economics and Business adm.	10.3	5.5	22.7	.4	17.0	8.5	17.3	9.2	23.8	10.4	21.9	14.9
Natural science and technology	13.3	18.6	12.6	18.5	15.4	20.3	21.7	25.6	23.8	26.5	26.0	23.9
Health care	32.8	24.3	34.4	25.5	36.0	23.8	43.0	21.1	41.0	18.5	45.2	19.4
Other	22.1	5.5	20.7	5.8	26.4	6.8	36.6	7.4	37.9	6.8	42.6	7.1
Total	22.8	100	24.2	100	26.0	100	30.6	100	32.8	100	34.0	100

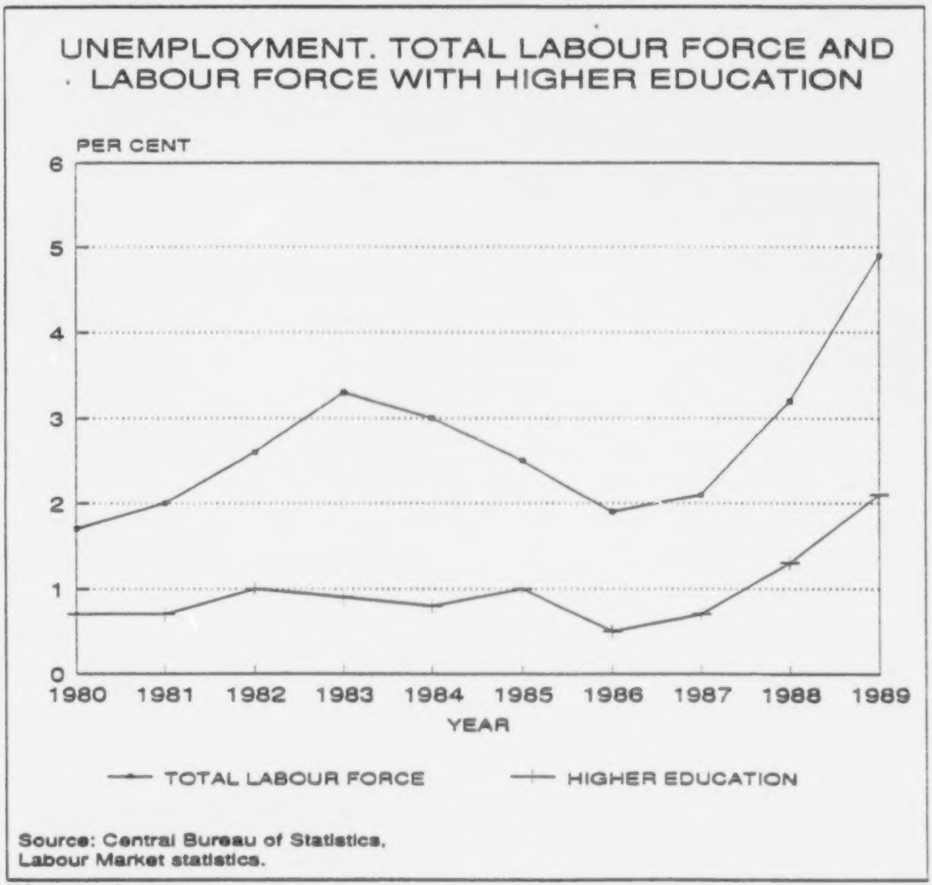
University lower degree	**79/80**		**81/82**		**83/84**		**85/86**		**86/87**		**87/88**	
	Pct. fem.	Pct. by field	Pct. fem.	Pct. by field	Pct. fem.	Pct. by field	Pct. fem.	Pct. by field	Pct. fem.	Pct. by field	Pct. fem.	Pct. by field
Humanities	44.5	71.6	56.7	69.9	61.1	51.5	61.8	45.4	57.7	38.8	63.0	39.6
Social sciences	26.5	8.3	32.0	10.3	49.1	20.0	48.9	21.7	47.1	21.0	54.5	20.4
Natural science and technology	18.1	16.7	24.9	14.4	29.1	19.6	28.5	22.7	32.5	28.3	37.0	25.9
Other	88.9	3.4	60.7	5.4	62.4	8.9	59.0	10.1	55.7	11.8	58.8	14.1
Total	37.7	100	45.0	100	48.4	100	46.5	100	45.4	100	51.5	100

Regional Colleges	**79/80**		**81/82**		**83/84**		**85/86**		**86/87**		**87/88**	
	Pct. fem.	Pct. by field	Pct. fem.	Pct. by field	Pct. fem.	Pct. by field	Pct. fem.	Pct. by field	Pct. fem.	Pct. by field	Pct. fem.	Pct. by field
Humanities	65.6	.4	62.7	.4	71.3	6.5	66.6	7.2	69.8	7.1	69.6	.3
Economics and business adm.	24.2	3.7	27.2	4.3	33.5	6.0	36.4	8.6	43.6	11.3	51.1	14.3
Natural science and technology	9.3	4.6	11.5	4.7	17.3	7.1	15.9	8.0	19.7	8.6	21.4	9.3
Education	72.9	39.8	77.3	36.2	80.2	35.1	83.4	31.5	84.4	28.3	85.0	26.4
Health care	83.6	43.0	86.0	44.9	86.9	42.8	86.6	40.0	89.4	40.4	90.3	36.4
Other	18.2	.5	19.8	2.5	17.9	2.6	33.2	4.8	25.5	4.3	33.4	7.2
Total	64.9	100	55.7	100	57.2	100	54.6	100	57.1	100	57.1	100

Source: Central Bureau of Statistics, Educational Statistics.

IV. ECONOMY AND LABOUR FORCE

Unemployment



UNEMPLOYMENT. TOTAL LABOUR FORCE AND LABOUR FORCE WITH HIGHER EDUCATION

Source: Central Bureau of Statistics, Labour Market statistics.

Figure 4

From 1980 and onwards general unemployment rose and reached a peak in 1983. After this the labour market improved and general unemployment fell. This improvement was primarily due to a deregulation of the credit market, which led to a high increase in private loan-funded consumption. However, from 1987, this led to households beginning to save, in order to pay back debts, and correspondingly private consumption declined. At the same time, oil prices fell dramatically, thereby causing a big deficit in the nation's balance of payments, which forced the government to implement a contractive budget policy. As a result, general unemployment began to rise again and reached a new high of 4.9 per cent in 1989.

The Norwegian government sees fighting unemployment as one of it's most important targets. Labour market authorities use a wide range of employment measures, such as retraining programs, wage subsidising in private enterprises, creating special employment opportunities in the public sector and so on. In 1989, 2.3 per cent of the labour force were engaged in those kinds of activities, and were not counted as unemployed.

From the figure above we see that unemployment among personnel with higher education was much lower than among the total labour force. An important reason for this is that the majority of personnel with higher education work in the public sector, where the labour market has been much more stable than in the private sector. But it also probably reflects a more general "scarcity" of highly educated manpower relative to manpower without higher education, which has prevailed in spite of the fact that an increasing share of the labour force has higher education, thus reflecting an unfulfilled and growing demand for highly skilled manpower.

Still, one sees that the general labour market situation is also reflected in the unemployment rate among highly skilled manpower. In 1989, there was considerable unemployment also among personnel with higher education.

Increasing level of education in the labour force

During the last two decades the percentage of the workforce with higher education has increased very much. This increase has been assimilated through a growing proportion of the total labour force working in the most "academic" sectors,i.e., the sectors where a high proportion of the labour force have higher education, but also through an increasing share of the work force having higher education in all sectors.[1]

From fig. 5 one sees that an increasing percentage of the labour force have higher education in all sectors. From 1975 to 1989 the percentage of the total labour force with higher education increased from 12 per cent to 22 per cent. The highest increase occurred in the financial/business service sector. In 1989, the percentage of the work force with higher education was higher in the financial/business service sector than in the public sector.

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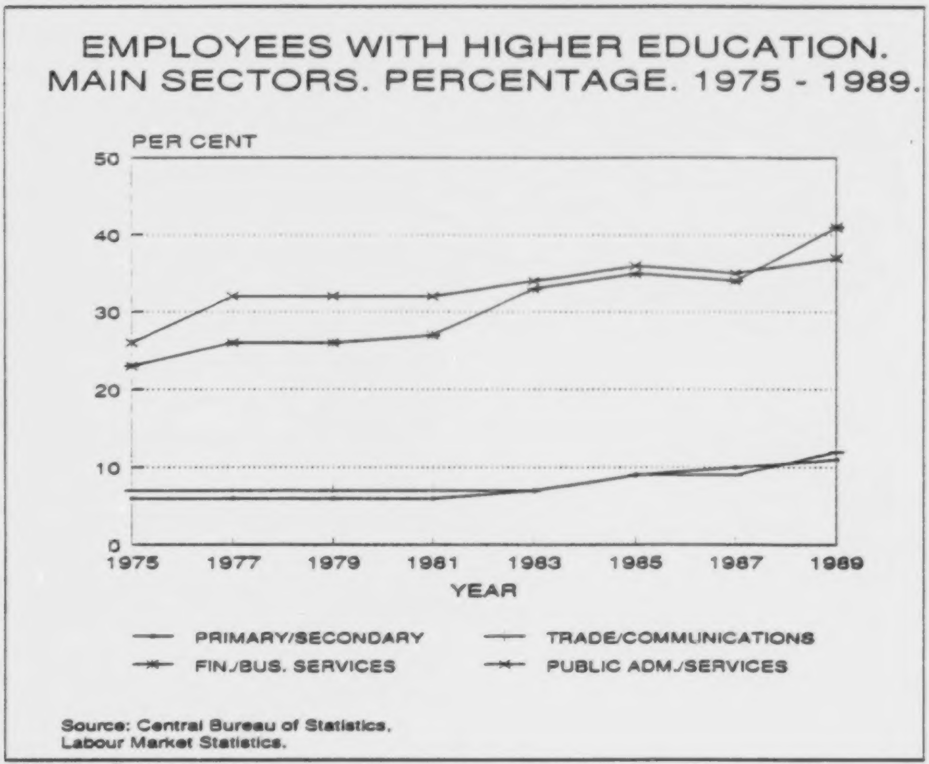
[1] The industrial classification builds on SN - Standards for Industrial Classification, which accords with ISIC - the International Standard Industrial Classification of all Economic Activities.
Primary/secondary branch: 100000 - 502300,
Trade/communications: 600000 - 720200,
Financial/business services: 800000 - 83300,
Public administration and defence; 900000 - 96000.



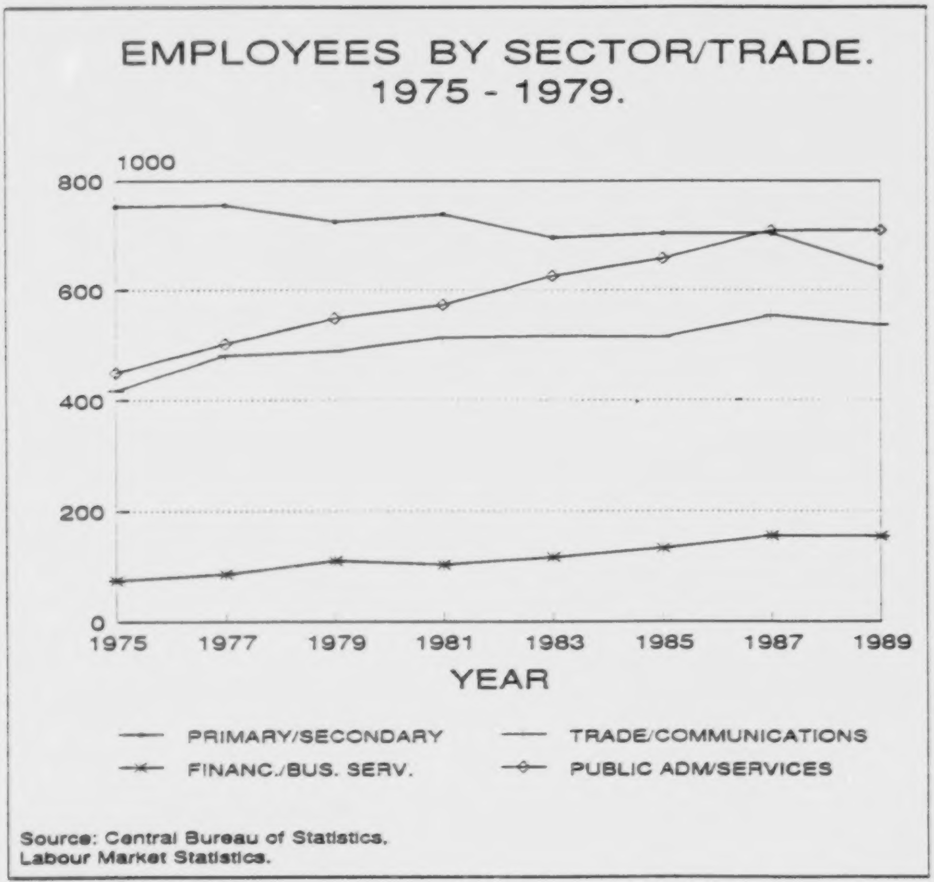
EMPLOYEES WITH HIGHER EDUCATION. MAIN SECTORS. PERCENTAGE. 1975 - 1989.

Source: Central Bureau of Statistics, Labour Market Statistics.

Figure 5

The figure also shows that the percentage of the labour force with higher education is much higher in the financial/ business service sector and public administration/service sector, than in the primary/secondary sector and the trade/communications sector.

Figure 6 shows developments in the number of employees in the different sectors. One sees that the growth rate in the number of employees has been greatest in the financial/business sector and the public administration/service sector. Even in the late eighties when central authorities sought to stop the increase in employment in the public sector, growth continued in this sector because of increasing employment in local administration and services. In the primary/secondary sector the number of employees has gradually been reduced.



Source: Central Bureau of Statistics,
Labour Market Statistics.

Figure 6

The next table shows that there has been a shift towards more of the highly educated labour force employed in the financial/business sector and less in the primary/secondary sector. The percentage of the labour force employed in trade and communications and the public sector has remained at the same level during the whole period.

TABLE 10: HIGHLY EDUCATED MANPOWER BY SECTOR. PERCENTAGE.
1975, 1989.

	1975	1989
PRIMARY/SECONDARY SECTOR	21	16
TRADE/COMMUNICATIONS SECTOR	14	14
FINANCIAL/BUSINESS SERVICE SECTOR	8	14
PUBLIC SECTOR	58	57

Source: Central Bureau of Statistics, Labour Market Statistics.

V. CHANGES IN THE TRANSITION INTO WORKING LIFE

Introduction

This chapter describes the development of the labour market for graduate manpower throughout the eighties, focusing on patterns in the flow of graduates to various production sectors, types of occupation, real wages, how relevant the education is for employment, and other labour market conditions.

The study looks at graduates from universities, regional colleges, teacher training colleges and engineering colleges. The analysis is mainly based on the annual labour market survey for graduate manpower, conducted by the Institute for Studies in Research and Higher Education. This survey includes university and regional college graduates, while graduates from teacher training colleges, engineering colleges and other colleges are occasionally included. All graduates in the groups in the survey are sent a questionnaire approximately 6 months after graduation, with about 40 questions concerning labour market conditions, job search experience, further education, previous work experience, educational background, etc. Between 80 and 90 per cent of the graduates respond to the questionnaire.

This survey gives background material for educational planning in the Ministry of Education, Research and Church Affairs for guiding and advising student counsellors and the general public.

We first discuss the labour market for different sectors and levels. Then we take a closer look at the graduates, classifying them by sector and field of study.

GRADUATES FROM UNIVERSITIES, REGIONAL COLLEGES AND TEACHER TRAINING COLLEGES.

University graduates

Main activity

The percentage in employment has remained stable at over 80 per cent from 1985 to 1989, although there is a slight reduction from 1987 to 1989 (tab. A 1). This is also true for single fields of study, even though there are some exceptions.

The employment rate is usually higher for women than for men. This is mainly because a considerable share of the male graduates do compulsory military service after they have graduated from higher education. In 1989, the employment percentage was 78 per cent for men and 84 per cent for women. Ten per cent of the men were doing compulsory military service.

Occupations demanding higher education in Norway are concentrated in the most central parts of the country. In 1987, 58 per cent of the graduates found employment in the South East, the most densely populated part of the country.

Usually 40-45 per cent of the employed graduates are in temporary employment (tab. A 12). In 1989, the per cent increased to 48%. This may partly be due to a higher proportion employed in "post degree programs".

In the last half of the eighties, about 10 per cent of the employed graduates were employed part-time (tab. A 11).

The percentage occupied with further studies six months after graduation has remained stable at 5-6 per cent in the last half of the eighties.

Unemployment

Until the end of the eighties university graduates had very few difficulties in finding employment. The recent poor labour market situation has, however, caused difficulties in finding employment also among university graduates. The percentage of graduates who were seeking work and who were unemployed six months after graduation increased significantly in 1989(tab. A 2).

Nevertheless, even 6 months after graduation, the possibility of finding employment is good. From table A 3 we see that, among graduates in the spring of 1989, 45 per cent of those still seeking employment four months after graduation found employment within two months.

Also other studies show a significant reduction in the percentage of unemployed six months after graduation.

Educational requirements

Most university graduates have found employment relevant to their education. From table A 8 we see that from 1985 to 1989 about 90 per cent of the graduates entered employment which was considered to demand higher education. The per cent was low for all fields of study, even though there clearly were differences between different fields of study.

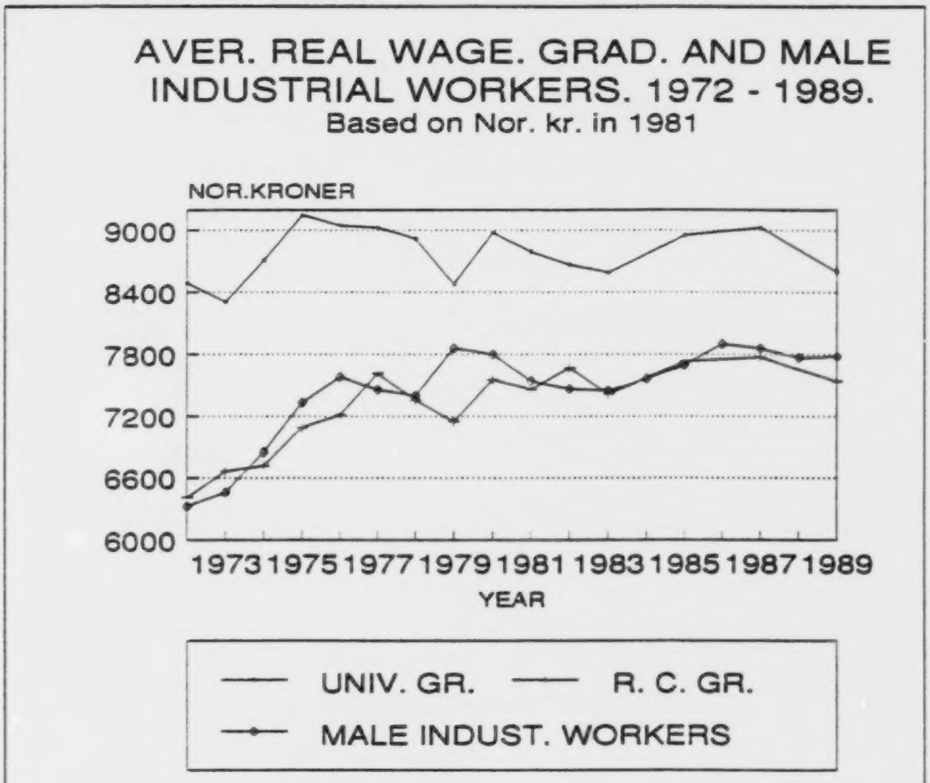
Also employment which was not considered to require higher education seemed to be mostly "favourable", in terms of wages and how useful the graduates thought their education was for their job. Among graduates in the spring 1989, only 2 per cent of the employed graduates thought that they had no use for their education.

From 1985 to 1989 an increasing share of the university graduates entered employment which the graduates thought required higher education, but not necessarily the education the graduates took, while an decreasing share entered employment which was believed to require the graduates' education. In 1989, the percentages were 30 per cent and 60 per cent. There are, however, great differences between fields of study in how graduates respond to this question.

Sector and occupations

From table A 4 one sees that during the eighties nearly 1/3 of the university graduates in employment entered the private sector(primary/ secondary sector, trade/communications and the financial/business service sector). The percentage dropped in the last period, probably because of difficulties in finding employment in this sector. About half of the graduates that entered the private sector entered the financial/business service sector. There are, however, great differences between fields of study regarding the percentage entering the private sector.

From table A 6 one sees that among graduates in the spring 1989, half of the employed graduates worked in research/planning/development (including research/teaching at universities), about two-thirds of this was in the public sector. Thirty-one per cent had client work, about 83 per cent of this was in the public sector (mostly teaching). Thirteen per cent worked in administration and 9 per cent as office workers/labourers (very few worked as labourers).



Source: Inst. for Stud. in R. and HE, Graduate Survey.
R.C.GR = Regional College Graduates

Figure 7

Wage

The real wage for those in full-time employment has remained at the same level during the last 20 years (fig. 7), while in the seventies there was a substantial real wage increase for male industrial workers and for graduates from regional colleges.

From table A 10 one sees that, among graduates in the spring 1989, on average the real wage was highest in research/planning/development and in administration, and lowest in client work (mostly teaching) and office work/labour. On average, the best paid jobs were in the financial/business service sector, while the lowest paid jobs were in the public sector.

Top wages were in administration in the financial/business service sector.

Regional college graduates

Main activity

During 1985 to 1989 a decreasing percentage of regional college graduates have found employment 6 months after graduation (tab. A 1). The percentage fell especially from 1987 to 1989. In 1989, only 46 per cent were employed 6 months after graduation. The percentage was 40 per cent for men and 51 per cent for women. Eleven per cent of the men were doing compulsory military service.

An increasing percentage of the graduates continue to study. In 1989, 41 per cent had begun further studies 6 months after graduation, 2/3 of them answered that this was because of difficulties in finding relevant employment.

An important reason for locating the colleges in all parts of the country is to offer a possibility for taking higher education also in the less populated areas and thereby contribute to maintaining populations in these areas. Therefore one also sees a considerable higher proportion of regional college than university graduates finding employment outside the South East, i.e., not in the most centralized part of the country. In 1987, the percentage who found employment outside the South East was 51 per cent.

Unemployment

The labour market for regional college graduates has generally been good until the end of the eighties, even though the high general unemployment in 1983 clearly affected possibilities for finding employment (tab. A 2). However, the recent poor labour market situation has caused great difficulties in finding employment among these regional college graduates. In 1989, 13 per cent of these graduates seeking employment were unemployed six months after graduation. There were no significant differences between male and female graduates.

Educational requirements

Among the graduates in the spring of 1985, 70 per cent entered employment which was considered to require higher education. However, in the last two surveys, this percentage has been declining, and in 1989 it decreased to 54 per cent (tab. A 8).

This development is mostly due to a reduction in the percentage entering occupations which were believed to require the education which the graduates had finished, from 40 per cent in 1985 to only 26 per cent 1989 (tab. A 8). The percentage entering employment which was believed to require higher education, but not necessarily the education which the graduates took, has only declined from 30 to 28 per cent.

Twenty-nine per cent of the graduates considered that their jobs did not demand higher education, but that it was an advantage to have higher education. Seventeen per cent of the graduates in the spring of 1989 considered their education not important for their first employment after graduation.

Sector and occupation

Previously, 65-70 per cent of the regional college graduates found work in private industry. During the 1980s the continually declining percentage of those working in secondary industry was balanced out by those who went into the financial/business service sector. Economic problems within this sector, however, meant that only 24 per cent of the regional college graduates found work in this sector in 1989 as opposed to 41 per cent of the spring graduating class of 1987. In 1989, therefore, only 50 per cent of the regional college graduates found work in private industry. Instead, increasingly more found work within public administration and other parts of the public sector.

Most regional college graduates were employed in office work in public and private administration, in teaching or in research.

Wage

In fig. 7 we see that the average real wage among those in full-time employment 6 months after graduation rose in the seventies, but remained at the same level during the eighties. One also sees a clear similarity between real wage developments for regional college graduates and for male industrial workers.

From table A 10 one sees that, among graduates in the spring 1989, on average wages were highest in research/planning/ development, and lowest among office workers/labourers. For all types of work, the best paid jobs were in the financial/ business service sector. On average, wages were lowest in the public sector. Top wages were found among graduates in administration in the financial/business service sector.

Salary differences between men and women in full-time employment 6 months after graduation have been much greater for regional college graduates than for university graduates. In the last half of the eighties, salaries for full-time employed women have been 92-93 per cent of the salaries of men.

Increasing demand for higher education

An increasing proportion of the regional college graduates combine their education with other kinds of higher education. In 1989, 28 per cent of the graduates had taken courses in higher education before they entered regional colleges. Among those who had not taken courses in higher education before they entered regional colleges, 31 per cent were taking further studies 6 months after graduation. This shows that at least 59 per cent of the graduates combined their regional college education with other higher education.

Does this development reflect increasing difficulties in finding employment with only a regional college education? Yes, there are several indications that this is the case. In 1989, 2/3 of those who continued to study did so because of difficulties in the labour market. Those graduates who entered employment with no previous education, had significantly more difficulties getting employment demanding higher education, and on average got lower wages than graduates with other higher education. Among those employed with no previous education, only half had employment demanding higher education, which is considerably lower than among those who had previous education. From table 11 one also sees that wage levels are significantly higher among those with previous education, than among those who did not take previous education.

The table below shows clearly that wage levels are higher the longer the education. Regional college graduates with 1-2 years of previous studying have, on average, wages that are considerably lower than the average for university graduates, but clearly higher than among those with no previous education. Those with 3-4 years of previous studying on average, have wages that are slightly higher than among university graduates.

TABLE 11: WAGE AND LENGTH OF STUDY TIME. REGIONAL COLLEGE GRADUATES. Based on Nor. kroner in 1981.

	years of previous studying		
	0	1-2	3-4
Total	12 404	13 386	15 261
Natural science	12 247	13 567	14 546
Economics	12 247	13 164	15 619
Other	11 608	13 654	14 614

Source: Institute for Studies in Research and Higher Education, Graduate Survey.

Teacher training college graduates

Main activity

TABLE 12: MAIN ACTIVITY. TEACHER TRAINING COLLEGE GRADUATES. PERCENTAGE.

YEAR	1984	1985	1986	1989
EMPLOYED	69	61	66	60
STUDYING WITHOUT PAY	26	32	28	36
OTHER	5	7	6	5

Source: Institute for Studies in Research and Higher Education, Graduate Survey.

From the table above, one sees that the percentage of these graduates in the spring term who were employed 6 months after graduation has decreased from 69 per cent in 1984 to 60 per cent in 1989. There are no substantial differences between men and women.

Six per cent of the men were doing compulsory military service. Thirty-five per cent found employment in the South East.

A high and increasing share take further education which gives better job opportunities as a teacher. In 1989, the figure was 36 per cent.

The table below shows that the percentage of the graduates who entered part-time employment after graduation decreased from 37 per cent in 1985 to 23 per cent in 1989. This may be due to better possibilities for entering full-time employment.

The percentage having temporary employment has also decreased; from 78 per cent in 1985 to 64 per cent in 1989.

TABLE 13: PERCENTAGE OF TEACHER TRAINING GRADUATES WITH PART-TIME JOBS. AVERAGE WEEKLY WORKING TIME IN PERCENTAGE OF FULL-TIME EQUIVALENT.

YEAR	1985	1986	1989
UNEMPLOYED	1	0	1
PERCENTAGE WITH PART-TIME JOBS	37	24	23
AVERAGE WORKING TIME IN TEMPORARY JOBS	78	63	64

Source: Institute for Studies in Research and Higher Education, Graduate Survey.

Unemployment

Teacher training graduates have had very few difficulties in finding relevant employment in the last half of the eighties. Among the graduates in the spring term of 1989 who were seeking employment, not more than 1 per cent were unemployed 6 months after graduation (tab.13).

This is partly due to a reduction in admission to teacher training colleges early in the eighties because of an anticipated overproduction of school teachers. The very low unemployment rate among these graduates may also in some part be because they know exactly what kind of jobs and wages they will get, and therefore have nothing to gain by waiting for more attractive jobs.

Educational requirements

From table A 8 one sees that the per cent of the employed graduates who considered their employment required higher education increased from 81 per cent in 1985 to 88 per cent in 1989. The per cent who believed it required teacher training college education increased from 68 per cent in 1985 to 73 per cent in 1989. The per cent who believed it required higher education, but not necessarily teacher training college education, increased from 13 per cent in 1989, to 15 per cent in 1989.

Wage

Average real wages among full-time employed teachers have been about 20 per cent lower than among university graduates, and also lower than among regional college and engineering college graduates, and have declined slightly during the last 5 years (tab.14, tab. 15 and tab. A 9).

Women's wages have remained stable at 99 per cent of the average of men in the last years.

TABLE 14: AVERAGE MONTHLY REAL WAGE FOR TEACHER TRAINING COLLEGE GRADUATES IN THE PRIVATE AND PUBLIC SECTORS. Based on Nor. kroner in 1981.

YEAR	1985	1986	1989
TOTAL	7 059	7 283	6 972
PRIVATE SECTOR	6 954	7 308	6 696
PUBLIC SECTOR	7 072	7 280	6 982

Source: Institute for Studies in Research and Higher Education, Graduate Survey.

Engineering college graduates

These results are from an annual survey done by NITO (the Norwegian Society of Engineers) of all graduates from engineering colleges, nine months after they have graduated.

Until the end of the eighties engineering graduates in general had few difficulties in finding employment, even though graduates from particular fields of study had some difficulties. However, at the end of the eighties engineering graduates also experienced significantly more difficulties in finding employment, in terms of unemployment and other entry conditions. Unemployment rose from a few per cent to 8 per cent, the employment rate sank from 50-60 per cent to 41 per cent in 1989, and the per cent in employment not demanding higher technical education rose from usually less than 10 per cent to 20 per cent in 1989. The per cent occupied with further studies also increased from a previous level of 20-30 per cent, to 34 per cent in 1989.

From 1982 to 1984, the percentage employed in the private sector increased from 69 to 75 per cent. Thereafter, the percentage decreased steadily, and in 1989 only 60 per cent of the graduates found employment in the private sector. A continuing reduction of employment in industry and increased competition from graduate engineers forced more graduates to find lower paid work in the public sector. The percentage finding employment has increased both in central and local government, but most in local government.

In the period until 1986 real wages among those who were in full-time employment 9 months after graduation were increasing in the private sector. However from 1986 and onwards, real wages among full-time employed graduates have been decreasing, particularly in the private sector.

TABLE 15: REAL WAGE AND EMPLOYMENT SECTOR. ENGINEERING COLLEGE GRADUATES. Based on Nor. kroner in 1981.

YEAR OF GRADUATION	1982	1983	1984	1985	1986	1987	1988
SECTOR							
CENTRAL GOVERNMENT	7 040	7 055	7 100	7 497	7 394	7 308	7 181
LOCAL GOVERNMENT	6 815	6 968	6 736	6 869	7 412	7 248	7 014
PRIVATE	7 565	7 474	7 606	7 879	8 001	8 018	7 872
TOTAL	7 374	7 337	7 459	7 720	7 879	7 768	7 583

Source: Norwegian Society of Engineers (NITO), Graduate Survey.

TABLE 16: EMPLOYMENT SECTOR. PERCENTAGE. ENGINEERING COLLEGE GRADUATES.

YEAR OF GRADUATION	1982	1983	1984	1985	1986	1987	1988
SECTOR							
CENTRAL GOVERNMENT	19	19	16	17	21	23	22
LOCAL GOVERNMENT	12	14	9	9	9	14	18
PRIVATE	69	68	75	73	69	63	60
TOTAL	100	100	100	100	100	100	100

Source: Norwegian Society of Engineers (NITO), Graduate Survey.

TABLE 17: MAIN ACTIVITY OF ENGINEERING COLLEGE GRADUATES NINE MONTHS AFTER GRADUATION. PERCENTAGE.

YEAR	1979	1981	1982	1983	1984	1985	1986	1987	1988
EMPLOYED:									
IN EMPLOYMENT DEMANDING HIGHER EDUCATION	49	55	41	45	50	57	56	53	43
IN EMPLOYMENT NOT DEMANDING HIGHER EDUCATION	9	6	8	14	5	4	5	5	7
UNKNOWN	-	-	-	-	4	3	3	2	1
ABOUT TO ENTER EMPLOYMENT	-	-	-	1	1	1	1	1	1
UNEMPLOYED:	1	2	4	3	3	1	1	1	8
MILITARY SERVICE	22	16	15	11	11	8	12	13	13
CONTINUING EDUCATION	19	21	30	26	26	25	21	24	22
UNEMPLOYED FOR OTHER REASONS	1	0	0	0	0	0	1	1	5
NO RESPONSE	-	-	3	0	1	3	-	-	-
TOTAL	100	100	100	100	100	100	100	100	100

Source: Norwegian Society of Engineers (NITO), Graduate Survey.

GRADUATES FROM DIFFERENT FIELDS OF STUDY

University graduates

Humanities

During the eighties over 90 per cent of the humanities graduates in the spring term had found employment in the public sector as their first employment after graduation. Among graduates in the spring 1989, 61 per cent had client work, most of this in teaching in primary and secondary schools. Earlier surveys have shown that a substantial part have found employment in public administration, but in the latest surveys very few have entered public administration. Instead, many have found employment within research in universities and colleges.

A decreasing part of the graduates think that their first job requires their education (47 per cent in 1989), and an increasing share think that their first job might have been done by graduates with some other higher education (36 per cent in 1989). In 1989, 17 per cent of the graduates in the spring term believed that their first employment after graduation did not demand higher education.

During the eighties until 1989 the average wage for full-time employed humanities graduates was lower than the average for all university graduates, but in the survey in 1989 it was slightly higher (tab. A 9).

Social sciences

Approximately 90 per cent of the social science graduates in the spring term during the last ten years have entered the public sector in their first employment.

They have found work in most parts of the public sector. Among graduates in the spring 1989, many taught in secondary schools as their first employment. Many also entered research and teaching at universities and colleges. Seventeen per cent found employment in public or private administration. Eighty-five per cent of the graduate psychologists practised as psychologists 6 months after graduation.

In 1989, 48 per cent of the graduates thought that their job required the education they had finished, while 43 per cent believed that it required higher education, but not necessarily the education they had taken. Only 9 per cent believed that their job did not demand higher education.

A high percentage of social science graduates believe that their education is not necessary for most types of jobs. One exception is psychologists, about 80 per cent think that their job requires their education.

There is probably a great possibility for substitution among different social science fields in working life, and also in economics.

In the early eighties average wages among social science graduates in full-time employment were higher than the average for all university graduates. However, from 1985 and onwards they have been lower (tab. A 9).

Law

Usually 3 out of 4 graduates have entered public administration in their first employment. The rest mostly entered the financial/business service sector.

Among graduates in the spring 1989, about 85 per cent had legal work, as lawyers (apprentices), registrars, etc. A large part of those who worked as registrars later entered the private sector.

The per cent who think that their education is necessary for their work is still very high, even though it has decreased during the last four years, from 93 per cent in 1985 to 82 per cent in 1989.

Average wages in the first employment after graduation during the eighties have been lower than the average for all university graduates.

Administration/economics

Previously the number of people with this education were few, and there was a high demand for graduates. High wages in the private sector attracted most of the graduates, and until 1989 about 3 out of 4 found work in the private sector, mostly in the financial/business service sector. The recent lull in the labour market which has limited employment possibilities especially in the private sector, and the increase in student numbers in these fields during the eighties, have however forced many of the graduates to seek lower paid employment in the public sector. In 1989, therefore only 61 per cent found employment in the private sector.

The graduates work in a broad range of occupations. Among graduates in the spring 1989, almost one-third entered accounting and business management in their first jobs. Many also found employment in private and public administration, research or teaching.

The percentage who think that their job requires the education they have finished, has decreased from 66 per cent in 1985 to 47 per cent in 1989. Instead, there is an increasing share who think that their job requires higher education, but not necessarily the education they have taken (40 per cent 1989).

Wages among full-time employed graduates during the eighties have on average been higher than the average for all university graduates (tab. A 9).

Natural sciences

During the period 1981 to 1987, roughly 40 per cent of the natural science graduates in the spring term entered research/teaching at universities and colleges in their first employment. During the same period the percentage entering secondary schools declined from 27 per cent to 4 per cent. The per cent entering the financial/business service sector on the other hand, increased from 4 to 17 per cent, and the per cent entering public administration increased from 8 to 17 per cent. The per cent entering the primary sector remained roughly stable from 13-14 per cent. As one can see from table A 13, wages are on average considerably higher in public administration and the financial/business service sector than in schools and research/teaching at universities and colleges. During this period therefore employment prospects for the new graduates were good and entrance patterns were shifting from low paid to high paid jobs.

From 1987 to 1989 this development, however, changed sharply. Recruitment fell in the primary sector, in the financial/business service sector and in public administration. Instead, the per cent entering secondary schools and universities and colleges increased very much. In 1989, 58 per cent of the graduates in the spring term had universities or colleges as their first employers. Undoubtedly this development must be due to poorer recruitment possibilities in the private sector and public administration, since wages there on average are considerably higher than in the education sector.

Also a large proportion of those who were employed in the private sector were occupied with research/planning/ development, and among graduates in the spring 1989, 74 per cent worked with research/planning/development in their first employment.

In the last three surveys nearly two thirds of the graduates entered employment which they thought required the education they had taken. Only 8-10 per cent had employment which the graduate believed did not require higher education.

Average wages for full-time employed science graduates during the eighties have not differentiated much from the average wage for all university graduates.

Graduate engineers/architects

The labour market for graduate engineers and architects was, as for other university graduates, good, until the economic lull started in 1987. In 1989, however, as we can see from table A 2, the percentage that were unemployed 6 months after graduation, of those who were seeking employment, increased to 14 per cent from 4 per cent in 1987.

Especially architecture graduates suffered from this development. Thirty-three per cent of the architecture graduates in the spring term of 1989 who were seeking employment were still unemployed 6 months after graduation. But the unemployment rate was also high among graduate engineers. Eleven per cent of the graduate engineers who were seeking employment were unemployed 6 months after graduation. This is much higher than for all other university fields.

The causes for this development are mostly due to the general lull in the labour market. Due to the sensitivity in economic fluctuations in many construction branches, new architects are especially hit by this situation. The enrolment capacity for graduate engineering has also been greatly increased during the eighties, and this has also contributed to the high unemployment rate for this graduate group.

During the eighties most of the new graduates have entered the secondary sector, financial/business service sector or universities and colleges. The percentage entering the financial/business service sector has declined steadily during the last decade, probably because of competition from graduates with degrees in economics. The percentage entering jobs in universities or colleges where salaries on average are lower than in other parts of the economy, has on the other hand increased, probably because of difficulties in finding employment elsewhere.

Among graduates in the spring 1989, 89 per cent worked with research/planning/development, which is considerably higher than among graduates from natural sciences. A much larger share of graduate engineers and architects than natural science graduates also worked in private enterprise. This accounts for much of the higher wages among graduate engineers and architects than among natural science graduates.

The percentage who think their work requires their education has decreased from 72 per cent in 1985 to 57 per cent in 1989. This may be due to increased competition from natural science graduates. One has also observed that these graduates, because of a poor labour market, have taken occupations usually held by engineering college graduates. The per cent in employment considered not to require higher education has been 10 per cent or less.

Average wages for full-time employed graduate engineers and architects during the eighties have been considerably higher than the average for all university graduates, however this difference was greatly reduced in the survey among graduates in the spring term 1989 (tab. A 9).

Health care[2]

During the eighties about 60 per cent of the graduates in the spring term have entered health and social work after graduation. The rest of the graduates mainly found work in public administration or in universities or colleges.

The wage levels among these full-time employed new graduates are considerably higher than for all other fields of studies at universities. In 1989, the average wage among these graduates was 13 per cent higher than the average for all university graduates (notice that medical doctors are excluded from this analysis).

The percentage who considered their education necessary in their first employment after graduation has been high compared with other fields of study. In 1989, this figure was 90 per cent.

Agriculture and forestry

In the last decade about 30 per cent of these new graduates have found work in public administration. Usually about twenty-five per cent have entered employment in research and teaching at universities and colleges. The rest of the graduates have found employment in most parts of the economy.

Among graduates in the spring 1989, 55 per cent worked in planning/development and research. Twenty-four per cent worked in private and public administration. Much of this is public adminstration related to agriculture and forestry. The percentage in employment believed to require the graduates' education has been between 50 and 70 per cent in the surveys from 1985 to 1989. (tab. A 8). From 13 to 18 per cent of the graduates have been in employment considered not to require higher education.

During the eighties average wages among these full-time employed graduates have been lowest among all the graduate groups from universities (with one exception). In 1989, their average wage was 7 per cent lower than the average wage for all university graduates.

Regional college graduates

Administration/economics

In the beginning of the eighties, almost 90 per cent of the new graduates in employment 6 months after graduation had entered the private sector. Until 1987 the per cent entering the secondary sector and trade and communications was declining, while the per cent entering the financial/business service sector was increasing. This development was beneficial for the new graduates since the wage level among the new graduates in the financial/business sector is higher than in other parts of the private economy (tab. A 14). In 1985 and 1987, almost half of the new graduates entered the financial/business service sector.

However, the recent lull led to serious economic problems also in the financial/business service sector, and new recruitment to this sector fell heavily. Therefore in 1989 only 32 per cent of those employed six months after graduation worked within the financial/business sector. Instead, many graduates found employment in the public sector, mostly in public administration.

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[2] Health care: veterinary medicine, pharmacy, dentistry, and nursing science.

Among the graduates in the spring 1989, 39 per cent were employed as accountants, secretaries, office workers, etc. Many also worked as teachers or in research/planning/ development.

As for other regional college graduates, the percentage of the graduates who considered their first employment after graduation to require the education they took has declined considerably; from 41 per cent in 1985 to only 26 per cent in 1989. The per cent of the graduates who believed that their first employment required some other higher education, has mainly remained at the same level; in 1989 this was 26 per cent.

During the eighties average wages for this group were lower than among regional college graduates with a degree in natural science, however, in 1989, they were higher.

Natural sciences

Among graduates from the natural sciences the entrance patterns during the eighties have shifted from the private sector towards the public sector. In 1981, 77 per cent of those who were employed 6 months after graduation had entered the private sector. In 1989, this percentage had dropped to 46 per cent. Instead, an increasing share have found work in public administration, schools or in universities and colleges.

The percentage in employment 6 months after graduation has dropped greatly for this graduate group. In 1989, only 37 per cent of the graduates in the spring term were employed 6 months after graduation.

A higher proportion of these graduates than of all regional college graduates have, during the surveys from 1985 to 1989, believed that their education was necessary for their first employment after graduation. However, this percentage has been dropping also for these graduates . In 1989, it was only 35 per cent, while it was 56 per cent in 1985. The per cent in employment considered not to require higher education has been lower than among other fields of studies in regional colleges. It was 36 per cent in 1989.

During the eighties until 1989, average wages for this group were higher than the average for all regional college graduates, while in 1989 they were lower.

Other

Among the graduates in the spring 1989, a significant share of those in employment 6 months after graduation had entered teaching as their first employment. Many also worked in research/planning/development, in private or public administration, or in office work.

The percentage in employment 6 months after graduation was highest among regional college graduates. Fifty-six per cent of these graduates were employed 6 months after graduation.

From 1985 to 1989 the percentage of the graduates who believed that their first employment required the education they took, was lower than among all the regional college graduates together. It has also remained at the same level. In 1989, this was 20 per cent. The percentage who considered their first employment to require some other higher education has, on the other hand, been higher than among all the regional college graduates together. It has also remained at the same level, in 1989, 34 per cent.

Average wages during the eighties have been lower than among regional college graduates with a degree in economics and administration, or natural sciences.

VI. SUMMARY

In the introduction we raised the question whether the employment problems at the end of the 1980s are results of a long-term trend of "over-education" or just a reflection of a temporary downward economic trend.

In the 1980s growth in higher education has continued. Student numbers at universities were stable for 15 years until 1987; all expansion took place in the non-university or college sector dominated by short-term studies. At the middle of the decade there was a growing concern about recruitment to long-term research-oriented studies at the universities. But after 1987 a new student explosion has taken place at universities; student numbers increased by almost 50 per cent. Student numbers also increased at the colleges. The number of applicants to all higher education was very high. This happened at the same time as Norway had a strong increase in unemployment.

It remains to be seen if the increase in the number of students is due to a permanent increase in the proportion of age groups going to higher education or just a result that many age cohorts are demanding education at the same time. Probably it is both, the proportion of age groups recruited to higher education continues to increase, and is probably passing 30 per cent. It is realistic to think that this proportion is increasing to an extent that it will counterbalance the effect of the age groups being reduced by 25 per cent.

In spite of strong increase in student numbers during the 1980s, the total number of graduates is fairly stable. The reason why the number of graduates does not increase in step with student numbers is probably a growing proportion of part-time students who take different types of studies not leading to a degree. The total amount of higher education received by the population is then much higher than reflected by official statistics on graduates. It is received both by persons with and without any previous higher education. In the Norwegian system of higher education it is often difficult to identify what is basic and what is further education.

Even if the total number of graduates has not increased very much during the 1980s, it must be remembered that the figures are much higher than in the previous decades. The educational level of the workforce is therefore rising very strongly. Today's newcomers to the labour market have much more education than those who retire.

Although the total number of graduates is stable, the different types of degrees have quite different developments. The most striking result is the decrease in the number of graduates in humanities, both absolutely and relatively, and a strong growth in the business administration field. This is in accordance with the educational policy of the 80s, where business administration together with technology and health-related subjects were priority areas.

A very distinct feature of higher education in the 1980s is the strong increase in female students. More than half of all students are women, this development could be characterized as feminisation. But still the proportion of females is highest at the lowest level and lowest at the highest level of degrees. At the same time, the process of feminisation has been strongest in the university sector. The proportion of females has grown in all fields of study, but there are still big differences between the fields. The recruitment of females is weakest in technology.

During the seventies and until the end of the eighties the graduate labour market has mostly been good for graduates from all fields of study, in terms of possibilities of finding relevant jobs, wages and other job conditions. This situation has corresponded to a general low level of unemployment, an increasing share of the labour force being employed in the most academic sectors, and an increasing utilization of manpower with higher education in all branches.

During the eighties until 1988, only 2-3 per cent of the university graduates who were seeking employment were unemployed 6 months after graduation. Among regional college graduates the unemployment rate was between 2 and 6 per cent. Not more than 1 per cent of the teacher training graduates were unemployed 6 months after gradation (1985 to 1989). There was also low unemployment among engineering college graduates.

Real wages have mainly remained at the same level during the eighties, for graduates from most fields of study, also compared to wages for industrial manpower. University graduates on the average get better wages than regional college and engineering college graduates, who get better wages than teacher training college graduates. Wage differences for different types of higher education graduates are relatively small.

Among graduates from universities and engineering colleges the percentage of those in employment who believed that their first job after graduation required higher education has been very high; about 90-95 per cent. Among teacher training colleges the percentage has previously been somewhat lower, but has increased, and in 1989 was over 90 per cent. Among regional college graduates this percentage has been much lower, and has also declined, from 70 per cent in 1985 to 54 per cent in 1989.

It is important to notice, however, that these graduates have been in employment for only a few months. The labour market can only gradually adapt to and fully utilize an increasing supply of highly educated manpower. More productive work routines demanding higher education can only be achieved over time. Still, the fact that an increasing share of the graduates believe that their employment does not demand higher education must be considered as a clear signal of an increasing share of graduates entering employment where the prospects of utilizing knowledge from higher education are weaker.

Both among regional college graduates and university graduates one sees that, among those who believed their employment required higher education, a decreasing share believed that their employment needed the education they had taken, while an increasing share believed that it did not necessarily require their education. There may be many reasons for this:

1) greater similarity in the subject content in different fields of study

2) less demand for subject-specific knowledge relative to the demand for general skills and personal capabilities developed through studying

3) greater mismatch between the output-profile from higher education and the demand for graduates from different fields of study

In the latest survey (spring 1989), the graduate labour market took a sharp turn towards the worse, in terms of employment possibilities and real wages.

This development was mostly due to a low in the economy, which has led to a big increase in the general unemployment level.

For regional college graduates and graduate engineers poorer employment possibilities must also in part be contributed to a considerable admission expansion during the eighties.

Widespread economic difficulties and great substitution possibilities between different educations are the main reasons why one sees fewer job opportunities among almost all groups of graduates.

Regional college graduates, especially, experienced more difficulties in finding relevant employment. The percentage in unemployment 6 months after graduation rose to 14 per cent, more entered employment considered not to demand higher education, and more continued to study because of difficulties in finding relevant employment.

Unemployment also rose relatively much for engineering college graduates and graduate engineers and architects.

Unemployment sank for teacher training college graduates and graduates from humanities. Teacher training graduates, especially, had few difficulties in finding relevant employment. The reason for this is probably a considerable reduction in the number of graduates from these fields of study during the eighties.

However, it is still too soon to say if this worsening of the labour market for higher education graduates is only caused by a temporary lull in the economy, or is a signal of structural changes in the labour market for graduates from higher education. It would be necessary to follow these developments for some years before one could answer this question.

After 1989 the general unemployment level increased slightly, and it was 5.2 per cent in 1990 . In 1991, there are still no signs of improvement in the labour market.

Lay-offs have also affected graduate personnel with work experience, and in 1989 the unemployment rate for this group had increased to 2.1 per cent. This is still much lower than among manpower without higher education. After 1989, unemployment for this group has been reduced slightly.

APPENDICES

THE ANNUAL LABOUR MARKET SURVEY OF GRADUATE MANPOWER BY THE INSTITUTE FOR STUDIES IN RESEARCH AND HIGHER EDUCATION, OSLO.

Classification

UNIVERSITIES

University graduates include all graduates with a postgraduate university degree, except medical doctors, from the Universities of Oslo, Bergen, Trondheim and Tromsø, the Free Faculty of Theology, the Norwegian College of Veterinary Medicine, the Oslo School of Architecture, the Norwegian School of Economics and Business Administration, the Norwegian School of Management and the Norwegian Institute of Technology. University graduates are classified by fields of study: humanities, social sciences, law, administration and economics, natural sciences, technology and engineering, health care, and agricultural science and forestry.

REGIONAL COLLEGE GRADUATES

Regional college graduates have studied for two or three years. These graduates are divided into the following groups: administration and economics, natural sciences, humanities and liberal arts, social sciences and journalism.

TEACHER TRAINING COLLEGE GRADUATES

This group includes graduates with a general teacher training education of three years, but not vocational teachers or preschool teachers.

TABLE A 1: MAIN ACTIVITY. PERCENTAGE. UNIVERSITIES AND REGIONAL COLLEGES. 1985 - 1989

YEAR	EMPLOYED			FURTHER STUDIES[3]			OTHER		
	85	87	89	85	87	89	85	87	89
UNIVERSITIES:	84	84	82	6	5	6	11	11	13
HUMANITIES	77	76	84	13	11	7	11	14	9
SOCIAL SCIENCES	84	85	87	5	2	3	11	13	10
LAW	97	91	86	2	5	5	1	4	10
ADMINISTRATION AND ECONOMICS	89	85	84	6	8	7	5	7	9
NATURAL SCIENCES	84	86	81	8	5	7	8	10	13
ENGINEERING & ARCHITECTURE	81	81	71	1	4	5	18	14	24
HEALTH SERVICES	72	75	83	0	3	1	28	22	16
AGRICULTURE AND FORESTRY	88	89	86	1	3	6	11	8	8
REGIONAL COLLEGES:	66	61	46	27	29	41	7	10	13
ADMINISTRATION AND ECONOMICS	65	62	46	28	28	42	7	11	13
NATURAL SCIENCES	70	61	37	22	31	44	7	8	19
OTHER	66	62	56	27	31	36	8	6	8

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[3] Only unpaid studies

TABLE A 2: UNEMPLOYED GRADUATES SEEKING EMPLOYMENT AS A PERCENTAGE OF GRADUATES IN THE LABOUR FORCE. UNIVERSITIES AND REGIONAL COLLEGES BY FIELD OF STUDY. 1981 - 1989.

YEAR	1981	1983	1985	1987	1989
UNIVERSITIES:	2	3	3	3	7
HUMANITIES	1	4	5	6	4
SOCIAL SCIENCES	2	5	3	4	6
LAW	4	4	0	2	4
ADMINISTRATION AND ECONOMICS	1	4	1	2	6
NATURAL SCIENCES	2	3	5	7	8
ENGINEERING & ARCHITECTURE	3	3	1	4	14
HEALTH SERVICES	4	2	1	0	3
AGRICULTURE AND FORESTRY	1	0	2	1	3
REGIONAL COLLEGES:	3	5	2	4	13
ADMINISTRATION AND ECONOMICS	2	5	2	6	14
NATURAL SCIENCES	2	3	2	0	15
OTHER	7	7	3	5	10

TABLE A 3: RISK OF FINDING EMPLOYMENT WITHIN 2 MONTHS. PERCENTAGE OF GRADUATES FROM UNIVERSITIES, REGIONAL COLLEGES AND TEACHER TRAINING COLLEGES. 1989.

NUMBER OF MONTHS AFTER GRAD.	0 - 2	2.5 - 4	4.5 - 6
UNIVERSITY GRADUATES	0.58	0.59	0.45
TEACHER TRAINING GRADUATES	0.81	0.84	0.64
REGIONAL COLLEGE GRADUATES	0.44	0.51	0.29

TABLE A 4: EMPLOYMENT SECTOR. PERCENTAGE. UNIVERSITY GRADUATES BY FIELD OF STUDY.[4] 1981 - 1989.

FIELD	TOTAL					HUMANITIES					SOCIAL SCIENCES					LAW					ADM. AND ECON.				
YEAR	81	83	85	87	89	81	83	85	87	89	81	83	85	87	89	81	83	85	87	89	81	83	85	87	89
AGRICULTURE AND FORESTRY	1	1	1	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SECONDARY SECTOR	10	12	12	11	9	2	6	2	3	4	0	3	5	4	0	1	1	3	3	2	26	37	17	19	14
TRADE AND COMMUNICATIONS	5	3	3	4	3	0	0	2	0	1	0	1	2	1	1	2	1	1	1	0	8	4	11	13	10
FINANCE & BUSINESS SERVICES	13	14	14	18	15	2	1	3	0	2	2	10	4	6	5	16	20	21	16	21	43	44	48	50	37
PUBLIC ADMINISTRATION	25	22	20	25	21	27	22	7	7	4	32	23	33	33	16	80	73	68	78	71	13	9	8	10	16
SCHOOLS	14	14	17	7	10	52	47	63	39	46	27	25	22	17	18	0	0	0	0	0	1	4	0	1	4
UNIVERSITIES, COLLEGES AND RESEARCH INSTITUTES	19	19	22	22	27	12	12	9	24	21	25	16	24	21	34	0	2	3	2	3	8	1	10	6	10
HEALTH AND SOCIAL SERVICES	7	8	5	6	7	2	1	0	1	2	7	18	8	13	17	0	1	0	0	1	0	0	0	0	1
OTHER PRIV./PUBL. SERVICES	5	6	4	4	4	24	30	13	23	17	6	2	1	5	6	1	1	4	0	2	2	0	4	1	5
UNKNOWN	1	1	2	2	3	1	2	3	4	2	2	1	1	0	2	0	0	1	0	1	0	1	3	1	5

FIELD	NATURAL SCIENCES					ENGINEERING & ARCHITEC.					HEALTH CARE					AGRIC. AND FORESTRY				
YEAR	81	83	85	87	89	81	83	85	87	89	81	83	85	87	89	81	83	85	87	89
AGRICULTURE AND FORESTRY	0	0	2	2	0	1	0	0	1	0	0	0	0	3	0	0	3	2	14	7
SECONDARY SECTOR	14	13	18	13	9	20	27	32	26	20	5	1	4	2	3	8	1	12	9	10
TRADE AND COMMUNICATIONS	2	4	1	2	2	4	2	1	3	3	14	15	5	0	0	8	5	4	3	3
FINANCE & BUSINESS SERVICES	4	5	12	14	8	36	32	31	29	22	1	2	0	0	0	3	6	5	6	4
PUBLIC ADMINISTRATION	8	11	11	17	6	10	6	2	4	10	10	15	16	19	13	34	31	37	39	34
SCHOOLS	27	19	16	4	12	0	0	0	0	2	0	0	0	0	0	8	13	7	7	11
UNIVERSITIES, COLLEGES AND RESEARCH INSTITUTES	41	45	37	44	58	28	33	32	33	40	7	8	12	11	21	23	26	23	16	25
HEALTH AND SOCIAL SERVICES	1	1	1	1	2	1	1	0	2	1	63	57	62	52	61	0	1	0	0	0
OTHER PRIV./PUBL. SERVICES	4	1	1	3	1	0	0	1	2	1	0	2	1	0	0	8	17	6	3	7
UNKNOWN	0	1	2	1	4	0	0	0	0	4	0	0	1	13	1	1	0	5	4	1

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[4] The classification is compatible with SIC - the Standard Industrial Classification, which is based on ISIC - the International Standard Industrial Classification of all Economic Activities.

TABLE A 5: EMPLOYMENT SECTOR. PERCENTAGE. REGIONAL COLLEGE GRADUATES BY FIELD OF STUDY. 1981 - 1989.

FIELD	TOTAL					ADM. AND ECONOMICS					NATURAL SCIENCES					OTHER				
YEAR	81	83	85	87	89	81	83	85	87	89	81	83	85	87	89	81	83	85	87	89
SECTOR:																				
AGRICULTURE AND FORESTRY	1	1	1	1	2	1	2	1	1	0	1	0	3	1	12	1	0	0	0	0
SECONDARY SECTOR	24	20	20	13	11	31	17	13	12	9	26	32	41	18	9	11	18	24	14	11
TRADE AND COMMUNICATIONS	16	13	11	10	14	28	18	16	11	18	9	7	2	9	12	1	4	4	6	4
FINANCE & BUSINESS SERVICES	27	31	39	42	24	28	36	47	47	32	41	34	34	41	13	7	11	11	17	5
PUBLIC ADMINISTRATION	13	18	13	12	21	6	16	10	11	20	6	13	6	9	13	33	29	32	25	32
SCHOOLS	6	6	5	5	10	2	6	6	3	9	4	1	2	5	9	16	18	3	14	15
UNIVERSITIES, COLLEGES AND RESEARCH INSTITUTES	4	4	4	4	4	2	2	3	4	2	10	12	9	6	16	3	4	3	2	3
HEALTH AND SOCIAL SERVICES	2	2	1	2	5	1	1	1	2	4	0	0	1	5	3	7	7	3	0	9
OTHER PRIVATE AND PUBLIC SERVICES	5	5	6	5	6	0	1	3	4	2	0	0	4	1	2	19	19	19	20	20
UNKNOWN	2	1	2	6	3	2	1	2	6	4	3	0	0	6	2	1	0	1	2	3

TABLE A 6: BRANCH AND TYPE OF EMPLOYMENT. PERCENTAGE OF GRADUATES FROM UNIVERSITIES, REGIONAL COLLEGES AND TEACHER TRAINING COLLEGES. 1989.

	Total	Research/ planning/ developm.	Client	Administration	Office worker/ labourer
Universities:					
Total	100	47	30	14	9
primary/secondary/ trade/communications	14	6	2	2	3
finance/bus. serv.	15	8	3	2	3
public services	71	33	25	10	3
Regional colleges:					
Total	100	23	28	14	34
primary/secondary/ trade/communications	31	2	9	4	14
finance/bus. serv.	23	12	2	2	8
public services	46	9	17	8	12

Research/planning/development: architects, engineers, university teachers, consultants in economics/administration, etc.

Client: teachers in primary/secondary schools, priests, lawyers, advisers, artists, psychologists, salesmen, etc.

Administration: consultants in public administration, management in private enterprises and organisations

Office worker/labourer: accountants, secretary, office workers, labourers, etc.

TABLE A 7: TYPE OF WORK. PERCENTAGE OF GRADUATES FROM UNIVERSITIES AND REGIONAL COLLEGES. 1989.

	Research/ planning/ developm.	Client	Admin- istra- tion	Office worker/ labourer
UNIVERSITIES:				
HUMANITIES	23	61	7	9
ADM./ECON.	38	11	1	31
SOC. SCS.	36	44	17	3
LAW	3	85	10	2
NAT. SCS.	74	18	5	3
ENG./ARCH.	89	5	2	3
HEALTH CARE	46	49	6	0
AGRICULTURE	55	13	24	9
REGIONAL COLLEGES:				
NAT. SCS.	46	19	12	23
ECONOMICS	24	25	13	39
OTHER	8	44	19	28

TABLE A 8: EMPLOYMENT AND EDUCATIONAL REQUIREMENT. PERCENTAGE OF GRADUATES FROM UNIVERSITIES, REGIONAL COLLEGES AND TEACHER TRAINING COLLEGES BY FIELD OF STUDY. 1985 - 1989.

	1985				1987				1989			
	1	2	3	4	1	2	3	4	1	2	3	4
UNIVERSITIES:	65	24	8	3	67	28	9	2	60	30	8	2
HUMANITIES	53	28	13	6	55	33	8	4	47	36	14	3
ADM./ECON.	66	22	11	0	59	30	10	1	47	40	11	2
SOC. SCS.	50	41	6	3	49	40	9	1	48	43	6	3
LAW	93	6	1	1	89	6	4	1	82	13	4	1
NAT. SCS.	60	30	7	3	63	28	5	4	64	28	6	2
ENG./ARCH.	72	19	7	2	65	23	10	2	57	33	7	3
HEALTH CARE	92	7	1	0	81	12	8	0	90	9	1	0
AGRICULTURE	65	21	12	2	51	33	14	4	62	25	10	3
REGIONAL COLLEGES:	40	30	26	5	37	26	26	12	26	28	29	17
NAT. SCS.	56	28	14	3	48	29	12	11	35	29	20	16
ECONOMICS	41	28	27	4	38	22	28	12	26	26	30	17
OTHER	17	35	36	12	17	37	36	10	20	34	32	15
TEACHER TR. C.	68	13	14	6	-	-	-	-	73	15	7	4

1 = employment which the graduate thinks demands his/her education
2 = employment which the graduate thinks requires higher education, but not necessarily his/her education
3 = employment which the graduate thinks does not demand higher education, but that it is an advantage to have higher education
4 = employment for which the graduate believes it is not important to have higher education.

TABLE A 9: REAL WAGE. GRADUATES FROM UNIVERSITIES AND REGIONAL COLLEGES BY FIELD OF STUDY. 1981 - 1989. BASED ON NOR. KRONER IN 1981.

YEAR	1981	1983	1985	1987	1989
UNIVERSITIES:	8 790	8 574	8 872	9 043	8 603
HUMANITIES	8 826	8 285	8 152	8 414	8 756
SOCIAL SCIENCES	9 001	8 684	8 764	8 907	8 388
LAW	8 390	8 441	8 781	8 743	8 470
ADMINISTRATION AND ECONOMICS	8 900	8 839	8 980	9 270	9 052
NATURAL SCIENCES	8 780	8 681	9 029	8 935	8 408
ENGINEERING & ARCHITECTURE	9 002	8 900	9 615	9 750	8 760
HEALTH CARE	9 873	9 306	9 600	10 733	9 748
AGRICULTURE AND FORESTRY	8 090	8 010	8 251	8 227	8 011
REGIONAL COLLEGES:	7 460	7 400	7 728	7 770	7 507
ADMINISTRATION AND ECONOMICS	7 500	7 446	7 569	7 733	7 539
NATURAL SCIENCES	7 730	7 548	8 254	8 153	7 399
OTHER	6 994	7 069	7 767	7 447	7 464

TABLE A 10: BRANCH, TYPE OF EMPLOYMENT AND AVERAGE MONTHLY WAGE. GRADUATES FROM UNIVERSITIES AND REGIONAL COLLEGES. NOR. KRONER IN 1989.

	Total	Research/ planning/ developm.	Client	Admin- istra- tion	Office worker/ labourer
Universities:					
Total	15 169	15 498	14 786	15 578	14 965
primary/secondary/ trade/communications	15 734	15 516	16 135	16 880	15 283
financial./bus. serv.	16 044	16 046	15 609	18 056	15 240
public services	14 838	15 243	14 644	14 949	14 338
Regional colleges:	13 288	14 216	12 945	13 602	11 810
prim/sec/trade/comm.	12 660	13 628	12 905	13 584	12 096
financial/bus. serv.	13 945	14 809	14 045	14 990	12 096
public services	12 571	13 324	12 803	13 349	11 273

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TABLE A 11: PERCENTAGE WITH PART-TIME WORK. AVERAGE WORKING TIME AS A PERCENTAGE OF FULL-TIME EQUIVALENT. GRADUATES FROM UNIVERSITIES AND REGIONAL COLLEGES BY FIELD OF STUDY. 1985 - 1989.

YEAR	1985		1987		1989	
	%	AV.	%	AV.	%	AV.
UNIVERSITY GRADUATES:	11	53	6		9	63
HUMANITIES	34	45	15		28	66
SOCIAL SCIENCES	12	60	5		12	66
LAW	5	66	1		4	71
ADMINISTRATION AND ECONOMICS	8	53	1		7	54
NATURAL SCIENCES	9	47	9		9	65
ENGINEERING & ARCHITECTURE	3	89	5		6	62
HEALTH SERVICES	15	79	19		21	60
AGRICULTURE AND FORESTRY	3	60	0		1	65
REGIONAL COLLEGE GRADUATES:	4	62	4		9	64
ADMINISTRATION AND ECONOMICS	3	64	3		8	63
NATURAL SCIENCES	6	63	5		12	72
OTHER	6	58	9		13	64

TABLE A 12: PERCENTAGE OF GRADUATES IN TEMPORARY JOBS. GRADUATES FROM UNIVERSITIES AND REGIONAL COLLEGES. 1981 - 1989.

YEAR	1981	1983	1985	1987	1989
UNIVERSITY GRADUATES:	40	44	44	39	48
HUMANITIES	52	56	59	55	56
SOCIAL SCIENCES	50	53	52	48	62
LAW	32	48	46	50	48
ADMINISTRATION AND ECONOMICS	12	4	13	13	29
NATURAL SCIENCES	54	58	47	49	65
ENGINEERING & ARCHITECTURE	32	32	22	26	44
HEALTH SERVICES	46	56	49	46	28
AGRICULTURE AND FORESTRY	36	46	52	42	48
REGIONAL COLLEGE GRADUATES:	21	21	16	15	39
ADMINISTRATION AND ECONOMICS	14	15	12	9	34
NATURAL SCIENCES	17	22	13	16	34
OTHER	39	40	33	44	61

TABLE A 13: REAL WAGE AND SECTOR. UNIVERSITY GRADUATES.
1985 - 1989. BASED ON NOR. KRONER IN 1981.

YEAR	1985	1987	1989
SECTOR:			
AGRICULTURE AND FORESTRY	9 451	8 690	8 300
SECONDARY SECTOR	9 824	9 853	9 046
TRADE AND COMMUNICATIONS	8 956	9 556	8 945
FINANCIAL AND BUSINESS SERVICES	9 397	9 669	9 129
PUBLIC ADMINISTRATION	8 361	8 570	8 307
SCHOOLS	8 494	8 577	8 553
UNIVERSITIES COLLEGES AND RESEARCH INSTITUTIONS	8 433	8 397	8 306
HEALTH SERVICES	10 314	10 478	9 092
OTHER PRIVATE AND PUBLIC SERVICES	8 352	8 700	8 572
UNKNOWN	8 585	8 843	-

TABLE A 14: AVERAGE MONTHLY REAL WAGE AND SECTOR.
REGIONAL COLLEGE GRADUATES. 1985 - 1989.
BASED ON NOR. KRONER IN 1981.

YEAR	1985	1987	1989
SECTOR:			
PRIMARY SECTOR	7 989	8 156	7 137
SECONDARY SECTOR	8 128	8 106	7 615
TRADE AND COMMUNICATIONS	7 520	7 408	7 108
FINANCIAL AND BUSINESS SERVICES	7 656	7 817	8 058
PUBLIC ADMINISTRATION	7 598	7 770	7 413
SCHOOLS	7 229	7 453	7 067
UNIVERSITIES REGIONAL COLLEGES AND RESEARCH INSTITUTIONS	8 089	7 798	7 489
HEALTH SERVICES	7 554	-	7 316
OTHER PUBLIC AND PRIVATE SERVICES	7 464	7 818	7 125
UNKNOWN	7 891	7 391	7 574

PAYS-BAS

THE NETHERLANDS

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Ministerie van Onderwijs en Wetenschappen

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INTRODUCTION

The vast expansion in higher education in the seventies and eighties led to a growing supply of graduates in the labour market. Only in the eighties did the first signs appear of a rising level of unemployment among graduates. Those qualified in certain fields had increasing difficulty in finding suitable employment, while in other fields the growing supply of graduates caused few problems in the labour market.

This study sets out systematically and consistently to address the relationship between higher education and the labour market. Developments in the labour market will be analyzed in the light of trends in student numbers in the nine sectors of higher education.

Research bodies, graduate associations, colleges of higher vocational education and universities are all actively involved with the issue of graduate employment. The research is, however, seldom representative for a large group of graduates and moreover the research findings are frequently difficult to compare. This report attempts to provide a systematic and empirical basis for the relationship between higher education and the labour market. To do so, it draws on existing research findings.

The key question in this study is how participation in higher education relates to developments in the labour market. This phrasing of the question leads to four subsidiary questions:

1. Which sectors of higher education have seen a growth in student numbers?

2. In which sectors is there unemployment among graduates?

3. Where are graduates finding work and what are the employment opportunities?

4. What social and economic developments influence the interface between higher education and the labour market?

These four subsidiary questions are discussed consecutively in chapters 1 to 4. The first relates internally to education, the second and third to the graduate labour market, and the last more particularly to developments determining the interface between higher education and the labour market. In the last chapter the general facts are summarized. Then the chapter is ended with some conclusions.

1. PARTICIPATION IN HIGHER EDUCATION

Over the last 25 years there has been an explosive increase in participation in higher education and this is still continuing. This development is occurring against the background of an increasingly knowledge-hungry society. This chapter discusses how the demand for graduates is expanding and in what sectors the growing graduate presence can be

Table 1.1

First-year students on full-time university and higher vocational courses, absolute numbers and % women

	Higher vocational				*University*			
	male	**female**	**total**	**% female**	**male**	**female**	**total**	**% female**
1967					13 526	3 316	16 842	20
1968					15 787	3 685	19 472	19
1969					16 552	4 213	20 765	20
1970					17 498	4 812	22 310	22
1971					17 968	5 693	23 661	24
1972					18 904	6 027	24 931	24
1973					13 647	5 291	18 938	28
1974	27 272	15 913	43 185	37	14 975	6 020	20 995	29
1975	28 506	17 291	45 797	38	15 885	6 898	22 783	30
1976	28 519	18 493	47 012	39	17 027	7 553	24 580	31
1977	27 981	18 429	46 410	40	17 928	8 212	26 140	31
1978	28 798	18 077	46 875	39	17 732	8 612	26 344	33
1979	28 607	18 817	47 424	40	17 409	8 794	26 203	34
1980	28 610	19 735	48 345	41	17 601	9 295	26 896	35
1981	28 527	20 222	48 749	41	17 080	9 623	26 703	36
1982	31 355	20 818	52 173	40	17 174	9 864	27 038	36
1983	29 018	20 452	49 470	41	17 827	11 511	29 338	39
1984	22 858	19 357	42 215	46	17 715	11 863	29 578	40
1985	24 045	20 114	44 159	46	17 549	11 980	29 529	41
1986	25 089	21 659	46 748	46	18 533	13 031	31 564	41
1987	26 438	23 239	49 677	47	20 248	14 831	35 079	42
1988	28 351	25 057	53 408	47	20 269	15 040	35 309	43
1989	29 050	26 887	55 937	48	20 877	15 932	36 809	43

detected. The chapter employs statistics on student numbers (first-year and all enrolled students) and graduate numbers per sector of education. These figures are collected and processed by the Central Statistical Office [Centraal Bureau voor de Statistieken] and subsequently used by the Ministry of Education and Science as input for estimating the number of graduates (1).

1.1 Growth in graduate numbers

Student numbers in higher education have risen steeply and are likely to continue rising for some time to come. On the basis of demographic trends, a decline in births after 1967 was expected to lead to a drop in the intake of students into higher education from 1985 onwards. This has not been the case. The 1986/1987 academic year actually marked a break-point in participation in secondary and higher education, with student numbers in both sectors unexpectedly showing a sharp increase. The current expectation is that student numbers in higher education will continue to increase at least into the nineties. University education in particular has expanded considerable over a period of 15 years. In 1973 saw 18,938 students embarking on a course of university education, while in 1989 there were more than 36,809 first-year students in the universities. The increase in the proportion of women among first-year students has been especially dramatic: from 28% in 1973 to 43% in 1989. This constitutes a steady increase of some 1% per annum in the proportion of women among first-year students. The proportion of women in university education is not, however, expected to increase much further.

In higher vocational education, the increase in student numbers has been much less marked. The number of first-year students on full-time courses in higher vocational education increased from 43,185 in 1974 to 55,937 in 1989 (see table 1.1), with a temporary dropfall early in the eighties. The proportion of women among first-year students rose over the same period from 37% to 48%. Prognoses still indicate a growth in the number of first-year students in higher vocational education. The proportion of women in higher vocational education has, however, been fairly constant since 1984 and according to the estimates of the Ministry of Education and Science is likely to remain so for some time to come.

The growth in participation in higher education cannot be explained solely by the increased female interest in courses of higher education. Other developments have also been involved. Reference has already been made to the increasingly knowledge-hungry nature of Dutch society. This development is thought to have led to an increased demand for graduates. Intake into higher education has had to grow to meet this. The educational policies of the early eighties, with the slogan "higher education for the masses", anticipated this increased interest.

Finally, developments in the field of social security and student grants and loans may also have played a part. The effects of the latter developments are unknown and difficult to calculate. But the result of these developments is certainly an increasing proportion of graduates across the whole field of employment.

1.2 Access to higher education

The Netherlands has a system of open admission to higher education. Participation is in principle open to everyone holding the requisite educational qualifications (2). This right to free admission is currently restricted only by the following exceptions:

a. specific subject requirements for certain field of study;

b. admission requirements based on what in theory are temporary problems of capacity or structural labour market considerations (numerus clausus).

c. selective admission for some higher vocational courses.

The introduction of a numerus clausus mentioned under b) imposes an upper limit on numbers of first-year students admitted to certain courses at certain universities. Specific examples are university courses in the health sector, such as medicine, veterinary medicine and dentistry, which have long been subject to a numerus clausus.

The colleges of higher vocational education can impose extra admission requirements in addition to the usual educational qualifications. For a number of higher vocational courses these admission requirements are actually essential to maintain the quality of the courses (especially in colleges of art). This is why selective admission is allowed for higher vocational courses.

1.3 New entrants

Optimal participation in higher education assumes an intake geared to the needs of the labour market. Developments on the supply side are largely dictated by the numbers and distribution of first-year students entering higher education. Tables 1.2 and 1.3 show sector by sector trends in intake.

The most conspicuous development in higher education is the increase in the proportion of first-year students entering the business sector in the late seventies/early eighties, and the corresponding decrease in the proportion of first-year students in the previously popular fields of behaviour and society. At present, the interest in a study in the fields of behaviour and society is again increasing. The proportion of first-year university students in the business sector rose from 8% in 1975 to 16% in 1990 (see table 1.2). There has been a similar rise in the proportion of first-year students in the business sector in higher vocational education. Of first-year students in 1988, no less than 28% (see table 1.3) and 20% respectively (see Appendix I, table 5) were following a full-time or part-time course in the business sector. The so far favourable situation of business graduates on the labour market has probably contributed to this growing popularity. In the late eighties, moreover, growth in employment opportunities was principally in the service sector (business and other services), the principal employer of business graduates.

Table 1.2

Percentage of first-year university students by sector, total and women only

Total	1970	1975	1980	1985	1988	1990(1)
Agriculture	2.4	4.4	4.0	3.4	2.9	2.9
Natural sciences	12.6	12.7	10.9	11.4	10.5	6.6
Engineering	15.0	11.6	12.5	13.2	14.5	15.8
Health	10.7	10.5	9.9	7.8	7.2	6.1
Business	10.0	7.9	9.0	13.2	16.5	16.3
Law	14.1	13.0	16.1	16.1	16.0	15.2
Behaviour and society	24.3	20.5	19.2	17.1	15.5	19.3
Language and culture	10.7	19.2	18.5	17.7	16.8	17.9
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0

Women	1970	1975	1980	1985	1988	1990
Agriculture	2.1	3.6	3.8	3.3	2.9	3.0
Natural sciences	9.2	7.3	6.3	6.4	6.2	4.4
Engineering	2.5	1.5	2.0	3.3	4.4	5.0
Health	13.1	9.7	10.3	10.5	10.3	8.2
Business	1.6	1.8	2.9	6.4	9.6	8.8
Law	12.5	13.8	18.0	18.2	18.6	17.2
Behaviour and society	39.8	31.2	28.2	24.8	21.5	26.1
Language and culture	19.2	31.2	28.4	27.0	26.6	27.2
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0

1) 1990 is an estimate and based on financial data.

Table 1.3

Percentage of first-year students per sector in higher vocational education, total and women only

Total	**1975**	**1980**	**1985**	**1988**
Education	31.1	18.4	16.4	15.5
Agriculture	3.6	4.0	4.7	3.8
Technology	32.3	30.9	23.5	24.4
Health	8.5	11.4	11.0	10.2
Business	8.4	16.1	27.2	28.1
Behaviour and society	9.0	11.7	8.1	9.5
Language and culture	7.0	7.1	9.1	8.4
TOTAL	100.0	100.0	100.0	100.0
Women				
	1975	1980	1985	1988
Education	42.4	26.6	24.9	23.1
Agriculture	1.3	1.9	2.2	2.0
Technology	10.8	10.8	6.4	7.1
Health	14.9	19.2	18.1	17.3
Business	6.1	12.7	23.9	25.2
Behaviour and society	14.8	18.8	13.1	15.1
Language and culture	9.6	9.4	11.3	10.3
TOTAL	100.0	100.0	100.0	100.0

Another trend in the choice of course by first-year students in higher vocational education is a declining interest in courses in the education sector, where the proportion of first-year students fell from 31% in 1975 to 16% in 1988. This declining interest in teacher training courses is to some extent the result of developments in the labour market. Demographic trends have led to a decline in the total amount of pupils on schools and a corresponding reduction in demand for teachers in primary and secondary education. In reaction to the deteriorating job opportunities for teachers, the intake for these courses has declined sharply. With primary teacher training courses this is thought to be the result of cyclical effects (see section 4.3).

At present job opportunities in education seem to be improving. In particular, there is an immediate and urgent demand for teachers in the scientific, technical and commercial subjects. Demand for teachers in primary education is also recovering.

The Ministry of Education and Science has addressed the expected shortage of teachers in a policy document submitted to the Lower Chamber of parliament in the spring of 1990. It is hoped to introduce policy measures to encourage more students to enter teacher training in the so-called shortage subjects.

In contrast to what might be expected in view of the needs of society, numbers entering the engineering/technology sector have not risen to any appreciable extent. In higher vocational education, interest in technology courses is actually declining. The proportion of first-year students fell from 32% in 1975 to 24% in 1988. The last years there is also a declining number of first-year students in the natural sciences, especially in biology and mathematics. This while there is a strong overall demand for technical experts who have had a practical schooling, like those who finished a college of technology.

In the universities, the relative proportion of students absorbed by the health sector fell from 11% in 1975 to 7% in 1988. The quota arrangements imposed by government (see section 1.2) have resulted in fairly constant numbers of first-year students entering the health sector. In view of the general rise in student numbers in universities, the relative proportion of first-year students absorbed by the health sector has therefore declined. Intake into the other sectors of both higher vocational and university education has remained more or less stable, apart from the general rise in absolute student numbers.

As concluded in paragraph 1.1 the total number of women who started a study in higher education is increased rapidly. Despite the increasing number of women students, their choice of subjects still seems fairly traditional. Two-thirds of all women in university education in 1988 were still opting for courses in the law, behaviour and society or language and culture sectors. Only in the business sector is the proportion of women increasing (from 2% in 1975 to 10% in 1988, see table 1.2). The proportion of women in the agriculture, science and engineering/technology sectors has so far remained fairly stable and indeed low. A similar trend is apparent in higher vocational education. Almost a quarter of all female students in higher vocational education in 1988 opted for courses in the education sector. Otherwise, popular courses among women are those in the health, behaviour and society and language and culture sectors. In higher vocational education too, the proportion of women opting for courses in the business sector is increasing, from 6% in 1975 to 25% in 1988.

1.4 Part-time courses

For students unable to undertake the normal syllabus due to work, domestic responsibilities or other activities, a large number of higher vocational and university courses offer the option of part-time study. Of all first-year students in higher vocational education during the 1989/1990 academic year, around 23% were on part-time courses. The proportion of part-time students in the universities is substantially lower. Some 7% of first-year university students were then on part-time courses (3).

In the universities, the number of part-time students has again increased over the last few years. Of all students enrolled at universities in the 1985/1986 academic year, 6% were studying part-time, but by 1989 the proportion had risen to over 8%. In absolute terms too, the number of part-time students in the universities has risen considerably, while in higher vocational education the number remains fairly constant.

Table 1.4

First-year students and all enrolled students studying part-time in higher vocational and university education, in numbers and in %

	1985		1986		1987		1988		1989	
	abs.	**%**	**abs.**	**%**	**abs.**	**%**	**abs.**	**%**	**abs.**	**%**
First-year:										
Higher voc.	16 791	27.8	17 860	27.6	17 822	26.4	16 509	23.6	16 863	23.2
University	2 405	8.1	2 614	8.3	2 606	7.4	2 046	5.8	2 474	6.7
All enrolled:										
Higher voc.	46 490	24.4	47 384	24.2	49 233	23.8	51 011	23.4	50 799	22.2
University	9 750	6.0	10 570	6.5	11 534	6.9	12 139	7.8	12 917	8.3

Certain fields prove to be extremely popular with part-time students. In the universities, this is particularly so for the law courses, which absorb around 40% of the part-time students. Psychology, sociology, economics and recently also social health are other subjects with relatively large numbers of part-time students.

In the colleges of higher vocational education, courses leading to secondary teaching qualifications used to be especially popular. Probably (partly) as a result of the reduced demand for teachers, both full and part-time courses in this area have had to contend with declining student numbers. The number of first-year students in the education sector fell from 8,369 students in 1975 to 5,257 students in 1988 (see Appendix I, table 5). Social work and business courses also have large numbers of students on part-time courses. Especially during the eighties, there was a sharp increase in interest in the latter field, paralleling the trend in full-time education.[7]

1.5 Length of courses and pass rate

The most reliable statistics on pass rates are to be obtained through cohort studies. By tracing the performance of a large number of students from a given year, it is eventually possible accurately to determine their pass rate and average length of study. For higher vocational courses, the most recent cohort study relates to the 1974-1976 cohort, while for university education the initial results are now available from the 1983-1984 cohort (see table 1.5). The first of these studies is somewhat out-dated, while the second is not yet complete since a substantial proportion of the students who began their courses in 1983/1984 still have to graduate. An estimate of the pass rate for higher vocational and university education must therefore suffice. The introduction of the University Education (Two-tier System) Act in 1982, meant a reduction of the official length of university courses from 5 years to 4. The maximum period of study at university with retention of the right to financial assistance was set at 6 years (4). Very few students manage to pass their final examinations within the set period. According to the Central Statistical Office, only 4% of all students who began their university studies in 1983/84 passed their final examinations within 4 years and only 18% did so within 5 years. Only in the health sector is the numerical pass rate after 4 or 5 years much higher: after 5 years, around half of the students in this sector have passed their final examinations.

Table 1.5

Pass rates for university first-year and final examinations, 1983/1984 cohort (in %)

	abs. number	first-year exam within 2 years	first-year exam within 5 years	final exam within 4 years	final exam within 5 years
Agriculture	939	82	89	-	3
Natural sciences	2 373	75	85	2	20
Engineering	3 806	68	78	2	16
Health	2 263	87	93	17	49
Business	2 242	64	79	2	14
Law	4 713	65	78	4	15
Behaviour & society	4 587	71	79	2	14
Lang. & culture	3 881	69	78	4	13
TOTAL	24 804	71	80	4	18

The average duration of study is not yet known for this cohort of students, but will in all probability come out at around 6 years. This means already a substantial reduction in the duration of university studies compared with the situation before introduction of the new system. (Duration of study was about 7 years).

The eventual pass rate of the students who began their university courses in 1983/1984 is not yet known. A reasonable rough estimate of the pass rate to be expected in final examinations would be around 90% of the pass rate for the first-year examinations after two years of study. That is, of all those who began their studies in 1983/1984, around 64% (0.9 *71%) should eventually pass their final examinations. Of those students who abandon their courses, a proportion will go on to follow another course in a different faculty or at another college of higher education. According to a random survey by the SCO (U. de Jong and J. Roeleveld, 1990), around two-thirds of all university drop-outs and almost half of all college drop-outs do go on to study at some other institution of higher education.

For higher vocational education, no recent cohort study is available and the pass rate has been calculated by a different method. By comparing for two consecutive years the number of students enrolled and the number graduating, it is possible to calculate a pass rate. The results are agregated by sector. This is an average pass rate for the individual institutions, that is, the pass rate calculated according to that fraction of the students entering a college of higher vocational education who also completed a course there. Students going on to pursue their studies at a different institution are counted as drop-outs.

According to this calculation, the average pass rate in higher vocational education is 57%. In full-time education the pass rate is 60%, while in part-time education a lower pass rate is to be expected, viz. only 49%. Differences also occur between the different sectors of education. The highest pass rate is found in the health sector (respectively 64% and 86%, see table 1.6). The average period of study in higher vocational education is 4.3 years, despite the fact that the official length of courses is generally the same as that in university education (both usually 4 years). The differences in actual duration of study between university and college students can be explained by the rather rigid approach in higher vocational education, with its year-group system ensuring that progress is determined by year of study.

1.6 Output

The number of graduates produced reflects trends in the numbers entering higher education, with a delay factor of a number of years representing the time required by those on courses to complete their studies. In the universities in particular, there is some extra lapse of time above and beyond the official period of study before students finally graduate. At the moment, the average duration of study in university education is around 6 years and in higher vocational education 4.3 years.

Increased numbers of students in higher education produced a surge of graduates in the eighties. The last years this effect was further aggravated because of the graduation of both old-style students (5-year courses) and new-

Table 1.6

Pass rate in higher vocational education in 1985-1987 (in %)

	full-time	part-time
Education	57	46
Technology	62	29
Health	64	86
Business	62	47
Behaviour & society	59	54
Lang. & culture	51	31
TOTAL	60	49

Table 1.7

Percentage of university graduates per sector, total and women only

Total	**1970**	**1975**	**1980**	**1985**	**1988**
Agriculture	2.8	3.6	3.4	3.4	6.7
Natural sciences	14.4	12.0	11.8	11.3	10.7
Engineering	16.8	17.1	13.3	12.3	10.6
Health	19.1	16.0	17.1	16.1	8.9
Business	9.8	8.6	7.3	6.9	9.8
Law	14.3	14.6	13.8	15.6	14.2
Behaviour and society	12.9	19.2	21.0	19.6	19.9
Language and culture	9.9	8.9	12.2	14.7	19.2
TOTAL	100.0	100.0	100.0	100.0	100.0

Women	1970	1975	1980	1985	1988
Agriculture	2.0	3.5	3.1	2.8	5.6
Natural sciences	10.8	8.7	7.1	6.4	6.0
Engineering	1.4	1.4	1.9	2.9	2.5
Health	23.7	19.6	17.9	18.0	10.9
Business	0.6	1.0	1.4	1.5	3.9
Law	21.4	16.0	15.0	16.7	15.5
Behaviour and society	20.5	32.6	33.2	29.2	27.6
Language and culture	19.7	17.2	20.5	22.6	28.0
TOTAL	100.0	100.0	100.0	100.0	100.0

Table 1.8

Percentage of graduates per sector in higher vocational education, total and women only

Total	**1975**	**1980**	**1985**	**1988**
Education	40.2	29.6	20.3	15.4
Agriculture	2.8	3.7	3.9	5.2
Technology	24.2	23.9	24.9	26.5
Health	9.3	11.5	13.1	14.8
Business	7.0	9.7	19.0	20.7
Behaviour and society	7.9	11.2	11.2	8.8
Language and culture	6.6	7.0	7.7	8.6
TOTAL	100.0	100.0	100.0	100.0

Women	1975	1980	1985	1988
Education	50.0	37.3	27.2	22.2
Agriculture	0.5	1.1	1.4	2.6
Technology	9.3	7.9	6.0	7.2
Health	15.6	18.3	21.5	24.9
Business	4.7	7.9	16.7	18.1
Behaviour and society	10.8	16.7	18.0	14.5
Language and culture	7.1	7.2	9.3	10.4
TOTAL	100.0	100.0	100.0	100.0

style students (4-year courses) at the same time. Where in 1975 there were fewer than 10,000 new university graduates, the number by the 1988/1989 academic year had almost tripled to 24,761. In higher vocational education over the same period, the number of new college graduates rose from 20,153 to 26,803. The proportion of women among the university graduates rose over the same period from less than 15% in 1975 to 39% in 1988.

As regards the trend in the numbers of graduates per sector, the proportion of graduates in the language and culture, behaviour and society sectors is currently extremely high. Four-tenths of the graduates in the 1988/1989 academic year qualified in courses in these fields.

The proportion of graduates in the business sector is set to rise sharply over the next few years due to the considerable popularity of the sector among first-year students. In 1988 10% of the university graduates and 20% of the college grduates completed a study in the business sector.

The proportion of graduates qualifying in the education sector fell substantially in the same period 1975-1988, from 40% to 15% of all graduates. Otherwise, the proportion of graduates in engineering/technology (including natural sciences) has remained reasonably stable over the last ten years. But because of the declining numbers of first-year students (see section 1,3) they expect a dropfall of graduates in these sectors.

Only a small number of women graduate in the technological sectors. The relative proportion of female graduates in the agriculture, natural science and engineering/technology sectors has lagged far behind the proportion of male graduates (see tables 1.7 and 1.8). Only in the business sector, and then particularly in higher vocational education, is there any increase in the number of women graduates. As observed in section 1.3, women tend to opt for courses in the 'social' sector. It is a fact prejudicial to women's chances on the labour market that by doing so they are also choosing courses in sectors with the most restricted prospects of employment.

2. UNEMPLOYMENT

Reference used frequently to be made to the threat of strains occurring in the labour market as a result of the growing supply of highly educated people. Where would all these graduates find work? Job opportunities were not expected to expand fast enough to be able to absorb the whole supply. High unemployment among graduates was expected to result. Fortunately, these gloomy predictions have proved unfounded. There has indeed been some slight increase in graduate unemployment, but nevertheless the vast majority of graduates have found work. Moreover, unemployment is still lower among graduates than among the work-force as a whole (1). The chances of a graduate finding suitable employment do, however, vary considerably between the various sectors of higher education.

2.1 Unemployment statistics

Graduate unemployment is determined on the basis of figures kept by the local employment exchanges. Up to 1988, the official figure for registered unemployment (total unemployment in the Netherlands) was based on these figures. Since 1 January 1989, however, the Labour-force Survey [Equête Beroepsbevolking], a monthly survey of 10,000 people, has been regarded as the official unemployment figure. The Labour-force Survey so far provides no detailed figures on graduate unemployment by level of qualification and field of study. For this reason, use is made here of unemployment statistics from the local employment exchanges. The definition of an unemployed person is anyone who is able and willing to accept paid employment, does not actually have paid work, and:

a) can accept paid work within two weeks;
b) is registered as unemployed with a local employment exchange;
c) and is looking for work for at least twenty hours a week.

The disadvantage of these figures, however, is that they take no account of statistical contamination. This contamination has various causes: the continued registration of individuals who have already found some kind of work but have failed to report this to the employment exchange; the fact that a proportion of those registered as unemployed are in fact for some other reason (study, health, etc) unavailable for work; and finally the fact that a number of those registered want to work for less than 20 hours a week. Moreover, inaccuracies in the registration of some?individuals mean that they are wrongly omitted from the?unemployment figure.

Total unemployment is thought to be overestimated by approximately 35% (2) as a result of such contamination. Statistical contamination among graduates is even greater, since this group more often seek and find work other than via the employment exchange and this is only discovered on re-registration. Provided that account is taken of this kind of contamination, the local employment exchange figures can well be taken as a reasonable indicator of trends in graduate unemployment.

2.2 Absolute extent of unemployment

Figure 2.1

Trends in unemployment, broken down into total unemployment in the Netherlands corrected for seasonal factors, unemployment among university graduates and unemployment among those with higher vocational qualifications not corrected for seasonal factors

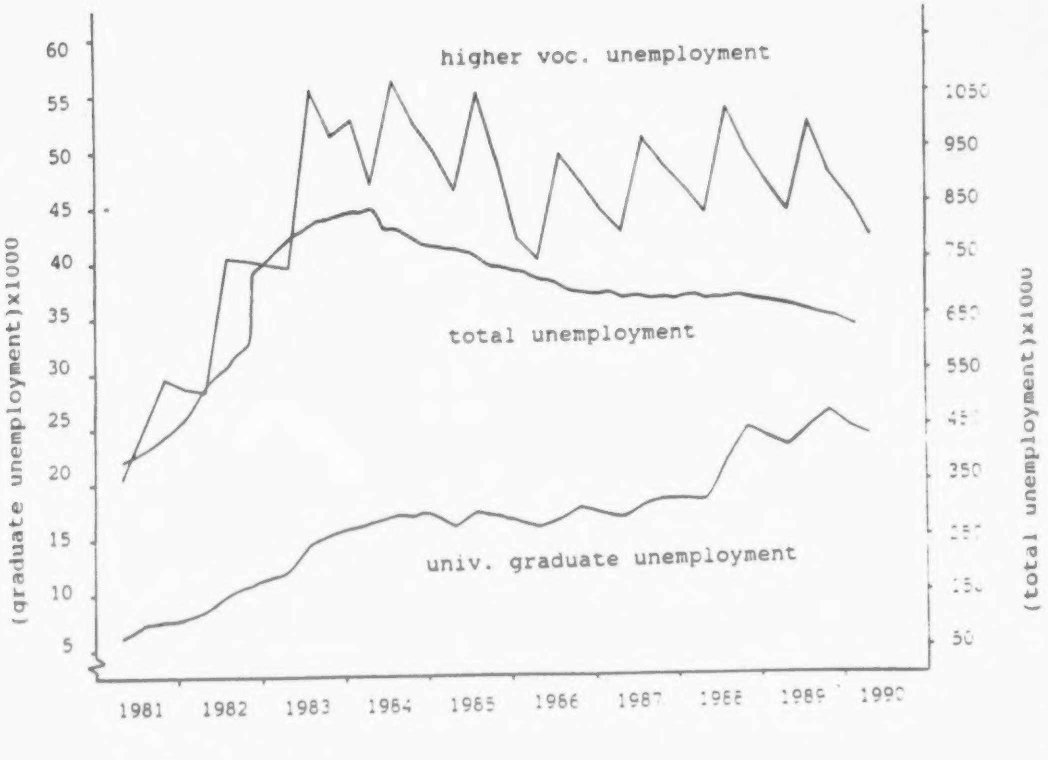

Table 2.1

Number of job-seekers with higher vocational qualifications. Total and newly qualified

Total qualified:

	May'77	May'80	May'85	May'86	May'87	May'88	May'89	May'90
Education	4 237	7 394	19 264	14 078	16 165	15 786	15 287	14 188
Agriculture	260	359	896	758	731	827	923	789
Technology	2 094	2 184	6 253	4 891	4 812	5 333	4 934	4 078
Health	144	360	2 689	2 659	2 610	2 828	3 010	2 958
Business	357	521	2 381	2 301	2 306	2 658	2 938	2 952
Behaviour & society	762	1 986	7 498	7 723	7 683	7 523	7 468	6 827
Lang. & culture	1 216	1 658	6 029	6 580	7 190	8 353	8 640	8 912
Other unclassifiable	274	280	1 349	1 136	980	945	1 160	1 501
TOTAL	9 344	14 742	46 359	40 126	42 477	44 253	44 360	42 205
inc. women	3 458	6 842	23 654	20 263	22 212	22 869	23 552	22 848
in %	37	46	51	51	52	52	53	54

Inc. newly qualified:

	May'77	May'80	May'85	May'86	May'87	May'88	May'89'	May'90
Education	766	1 925	4 684	3 640	3 804	3 397	3 081	2 665
Agriculture	59	82	345	269	212	235	265	206
Technology	449	336	1 293	832	669	794	801	566
Health	64	122	1 342	1 289	1 120	1 149	1 150	1 100
Business	92	130	870	860	769	828	905	863
Behaviour & society	262	684	2 984	3 039	2 590	2 322	2 096	1 597
Lang. & culture	278	413	2 003	2 271	2 288	2 361	2 280	2 277
Other unclassifiable	42	24	390	313	236	183	207	187
TOTAL	2 012	3 716	13 911	12 513	1 688	11 269	10 785	9 461
inc. women	795	2 026	7 916	7 324	6 990	6 719	6 532	5 819
in %	40	55	57	59	60	60	61	62

The total number of graduates unemployed has risen most early in the eighties. Where in May 1980 there were 14,742 (higher vocational) college graduates and 5,148 university graduates registered unemployed with local employment exchanges, five years later this figure had risen to 46,359 college and 16,046 university graduates. Over the last two years there have been a decline of people with higher vocational qualifications seeking work. The number of university graduates seeking work is still growing slowly. The last years also due to the graduating of old-style students (5-year courses) and new style students (4-year courses) at the same time.

But, apart from this temporary effect among university graduates, the late eighties have had fairly constant numbers of higher graduates seeking work.

Tables 2.1 and 2.2 provide detailed figures on unemployment among people with university and higher vocational qualifications.These figures provide a clear picture of the relationships between the sectors. The greatest numbers of job-seekers are found among graduates in the education, behaviour and society and language and culture sectors. In the last of these sectors, the number of job-seekers among university graduates was still negligible up until the early eighties. The growth in the number of unemployed language and culture graduates has occurred principally over the last decade.

Trends in unemployment among the newly qualified, that is, those who have had no work since graduating, is shown separately in tables 2.1 and 2.2. Trends in unemployment here vary little from the picture outlined earlier for the whole group of graduates. A striking aspect is, however, that new graduates from higher vocational education are less frequently registered as unemployed than newly qualified university graduates. In May 1990, 22% of college graduates seeking work were newly qualified, while the corresponding figure among university graduates was 41%. The figures give a good indication of the chances of employment for new-comers to the labour market.

A final point concerns the position of women in the labour market. The proportion of graduate women registered unemployed is significantly higher than the proportion of women graduating. The proportion of women completing a higher vocational course in the 1987/1988 academic year (37%) and then (May 1988) registering as unemployed with the local employment exchanges (60% among new college graduates) is considerably greater. For university graduates the differences are less great, but there remains a discrepancy between the proportion of graduates and the proportion of unemployment amongst women. These differences can partly be explained by the fact that women tend to choose studies and specializations offering more restricted prospects in the labour market. This would mean that even among graduates the risk of unemployment is greater for women.

2.3 Relative extent of unemployment

It is no easy matter to gauge the relative extent of unemployment. It is a major problem to establish the potential and actual size of the work-force per level of qualification and field of study. Statistics on the number of university graduates available (supply) and the number employed (demand) can be derived from the 1985 Work-force Census [Arbeidskrachtentelling] carried out by

Table 2.2

Number of university graduates seeking work, total and newly qualified

Total graduates:

	Sept'75	June'80	May'85	May'86	May'87	May'88	May'89	May'90
Agriculture	180	267	729	663	703	840	1.180	1.144
Natural sciences	711	963	2 040	1 917	1 933	2 063	2 530	2 474
Engineering	598	589	1 218	1 142	1 112	1 233	1 528	1 403
Health	197	463	2 141	1 979	2 106	2 052	2 128	1 974
Business	292	274	671	628	663	847	1 085	1 168
Law	640	381	1 463	1 457	1 518	1 826	2 469	2 589
Behaviour & society	893	1 597	4 834	5 011	5 171	5 389	6 676	6 737
Lang. & culture	304	614	2 950	3 297	3 658	4 134	5 598	5 556
TOTAL	3 815	5 148	16 046	16 094	16 864	18 384	23 195	23 393
inc. women	678	1 319	5 115	5 391	6 055	6 785	8 825	9 181
in %	18	26	32	33	36	40	38	39

inc. newly qualified:

	June'80	May'85	May'86	May'87	May'88	May'89	May'90
Agriculture	101	350	272	291	388	662	504
Natural sciences	239	746	704	683	694	956	801
Engineering	161	385	366	330	394	581	426
Health	213	1 075	948	1 030	954	964	823
Business	64	198	189	209	282	417	400
Law	153	763	779	757	886	1 281	1 243
Behaviour & society	699	2 307	2 369	2 323	2 337	2 964	2 716
Lang. & culture	204	1 466	1 606	1 696	1 951	2 651	2 511
TOTAL	1 834	7 290	7 233	7 319	7 886	10 546	9 517
inc. women	533	2 637	2 736	2 953	3 312	4 413	4 201
in %	29	36	38	40	42	42	44

the Central Statistical Office. The use of these statistics entails one major limitation. The census involved a random sample of around 3% of the population, meaning that it is difficult to achieve a reliable breakdown for the small group of graduates.

The Ministry of Education and Science has used what is known as the reconstruction method (3) to develop a means of calculating the number of university graduates employed in the Netherlands. This is based on the 1947 Population Census carried out by the Central Statistical Office. This method cannot be used to determine the number of college graduates in employment since the necessary historical data are not available.

To the number of university graduates in employment according to the data from the 1947 Population Census, the number of new graduates is each year added and the total is then corrected for retirement and mortality. The age distribution is based on the assumption that the average age of graduation is 25 years. The level of participation in the work-force is determined on the basis of the Work-force Censuses. The product of the levels of participation multiplied by the potential supply is the graduate work-force (actual supply). In this way, using the numbers registered as unemployed with local employment exchanges, it is possible to determine percentage unemployment per sector.

Table 2.3

University graduates seeking work in % per sector, 1975 - 1989

	1975	1980	1985	1986	1987	1988	1989
Agriculture	4.5	5.2	10.6	9.1	9.0	10.7	12.2
Natural sciences	4.0	4.6	7.6	6.4	6.1	6.8	7.3
Engineering	3.0	2.5	3.8	3.3	3.2	3.8	3.6
Health	0.7	1.8	5.5	4.6	4.6	4.9	4.4
Business	2.5	2.1	4.1	3.4	3.8	4.9	4.9
Law	3.6	2.0	5.3	4.7	4.8	5.6	6.5
Behaviour & society	7.6	8.3	15.1	14.0	12.9	13.2	14.0
Lang. & culture	2.2	4.3	13.4	13.7	13.5	14.7	16.2
TOTAL	3.1	3.5	7.9	7.2	7.1	7.9	8.4

During the early eighties, unemployment among university graduates increased substantially. From an initially low level of 3.5% in 1980, unemployment among university graduates rose to around 8% in 1985. Thereafter the level of unemployment again declined slightly, but in the late eighties rose further to around 8.4%.

The risk of being registered unemployed varies considerably from one sector to another. In 1989, the highest percentage of unemployment was found in the agriculture, behaviour and society and language and culture sectors. In the particular sector of language and culture the numbers unemployed have increased strikingly over the last fifteen years (to 16% in 1989). The main reason is the growing supply of graduates in this area coinciding with declining job opportunities in education.

2.4 Absorption capacity of the labour market

A good indication of the extent to which the labour market can absorb the number of graduates is given by the quotient of the numbers newly qualified higher graduates unemployed relative to the numbers graduating in each sector in the previous academic year. The easier it is for graduates to find work in the labour market, the lower the ratio shown in tables 2.4 and 2.5.

Up to May 1985, the number of job-seekers per 100 college graduates was rising steadily. Only since May 1985 has there been any change in this situation and any slight recovery in the labour market for these graduates. Only in the education, language and culture, and behaviour and society sectors has the number of college graduates seeking work remained extremely high, even since 1985, in relation to the numbers qualifying (see table 2.4).

Table 2.4

Newly qualified in higher vocational education unemployed per 100 graduating in the previous academic year

	May 1977	May 1980	May 1985	May 1986	May 1987	May 1988	May 1989
Education	6	15	45	38	43	52	37
Agriculture	9	11	-	30	21	34	21
Technology	8	6	21	13	9	11	13
Health	2	3	29	26	22	24	20
Business	7	7	23	19	14	17	15
Behaviour & soc.	8	14	49	44	39	37	36
Lang. & culture	17	22	93	89	92	84	75
TOTAL	7	12	41	34	31	34	29

In university education the number of job-seekers per 100 graduates has been higher than in higher vocational education. Despite the increasing number of university graduates, they are clearly nevertheless being absorbed reasonably well by the labour market. During the last two years, the number of job-seekers per 100 graduates has actually been lower than in the preceding years. Only in agriculture, behaviour and society and language and culture is unemployment high in relation to the number of graduates (see table 2.5).

2.5 Duration of unemployment

Table 2.6 shows how long graduates remain on the registers of the local employment exchanges. A striking feature is that college graduates remain on average longer on the register than university graduates. One third of those

Table 2.5

Newly qualified university graduates unemployed per 100 graduating in the previous academic year

	May 1977	May 1980	May 1985	May 1986	May 1987	May 1988	May 1989
Agriculture	25	28	39	42	49	54	61
Natural sciences	18	17	42	37	33	28	28
Engineering	21	11	21	18	16	14	14
Health	6	11	49	41	36	32	39
Business	9	8	23	18	17	19	18
Law	11	11	32	32	27	29	32
Behaviour & soc.	24	31	80	74	67	60	47
Lang. & culture	10	18	65	66	62	56	46
TOTAL	15	17	49	45	41	38	36

qualified in higher vocational education and seeking work remain on the registers for longer than two years, while only one-fifth of university graduates do so. Between 1985 and 1990, moreover, the proportion of college graduates experiencing long-term unemployment rose, while among job-seekers with a university background there was a fall in long-term unemployment. Another conspicuous feature is that, in those sectors where graduate unemployment is high, the average period of registration was also longer. Both for college and university graduates, the proportion of long-term unemployment was higher than average in the behaviour and society and language and culture sectors. Graduates in the (university) science sector and (higher vocational) education sector also have a higher than average percentage of long-term unemployment. In the science sector, it is principally biologists who are registered long-term as unemployed with the local employment exchanges.

Table 2.6

Duration of graduate unemployment per sector, for the period 1986 - 1990

University graduates

	May 1986			May 1988			May 1990		
	0-1 yr	1-2 yrs	>2 yrs	0-1 yr	1-2 yrs	>2 yrs	0-1 yr	1-2yrs	>2yrs
Agriculture	58	24	18	67	17	16	62	25	13
Natural sciences	48	22	30	55	19	26	57	22	21
Engineering	57	18	25	54	14	22	67	16	17
Health	65	22	13	74	14	13	70	16	13
Business	54	21	24	66	15	19	68	16	16
Law	56	21	22	63	16	20	62	21	17
Behaviour & society	41	26	32	48	20	32	50	25	25
Lang. & culture	46	26	28	52	20	28	54	25	22
TOTAL	50	24	26	57	18	25	57	22	20

College graduates

	May 1986			May 1988			May 1990		
	0-1 yr	1-2 yrs	>2 yrs	0-1 yr	1-2 yrs	>2 yrs	0-1 yr	1-2 yrs	>2yrs
Education	46	22	32	42	24	34	44	21	35
Agriculture	59	18	23	60	18	22	61	17	22
Technology	52	18	29	59	18	23	55	16	29
Health	59	24	17	61	21	18	61	22	17
Business	58	20	21	62	16	22	65	15	20
Behaviour & society	43	25	32	41	21	38	42	21	37
Lang. & culture	42	25	33	39	24	37	43	18	39
TOTAL	47	23	30	46	22	32	48	19	33

3. EMPLOYMENT OPPORTUNITIES

In this chapter we try to describe the employment situation of graduates. This is not easy, because there is no regular blanket survey carried out in the Netherlands, like the 'first destination surveys' in for instance England and Canada. The surveys carried out by research institutions and graduate associations all concern the employment situation in specific fields of study. The problem with these is the difficulty of comparing the findings due to the use of widely varying questionnaires and classifications (1), partly resulting from varying research aims.

This chapter draws on labour market statistics from a range of sources. For an overview of supply and demand in the graduate labour market, we selected some general statistics in section 1. A survey research give some information about the employment situation for graduates (section 2). Section 3 provides insight into the current and future job prospects offered by the various fields of study in both higher vocational and university education. Finally, graduate salaries are examined on the basis of random sample studies (section 4).

3.1 Trends in supply and demand

Chapter 1 discussed the increasing number of students in higher education. As a result of this development there will be an increasing proportion of graduates across the whole field of employment. Where in 1960 graduates still made up only 4 percent of the labour force, the percentage has now risen to 20% (see table 3.1).

This trend has had consequences for graduate employment. The growing supply of graduates (almost 1 million graduates in 1985) has created a growing demand for graduates in the labour market.

Table 3.1

Percentage graduates in labour-force 1960-1990

	Higher vocational	University graduates	Total
Census 1960	-	-	4.4
Census 1971	-	-	7.8
Work-force census 1979	10.0	3.4	13.4
Work-force census 1981	10.7	3.5	14.3
Work-force census 1983	11.2	3.6	14.9
Work-force census 1985	11.8	3.9	15.7
Labour-force survey 1990	13.8	6.3	20.1

Table 3.2

Graduate labour market compared with total labour market, men and women 1979-1985

		Pt.supp	Supp	Demand	Unemp.
	Higner voc.	634.500	529.000	511.800	17.200
1979	Univ. grads	169.300	160.300	155.100	5.200
	Whole pop. 15-64 yrs	9.009.800	5.221.000	4.854.800	205.000
	Higher voc.	688.300	587.700	566.700	21.000
1981	Univ. grads	194.000	186.100	180.100	5.000
	Whole pop. 15-64 yrs	9.323.100	5.515.700	5.076.100	439.600
	Higher voc.	742.600	637.600	597.700	39.500
1983	Univ. grads	225.100	321.900	202.200	11.700
	Whole pop. 15-64 yrs	9.542.400	5.747.100	4.972.400	774.700
	Higher voc.	869.300	738.300	691.700	45.800
1985	Univ. grads	252.200	239.000	224.100	14.700
	Whole pop. 15-64 yrs	9.776.700	5.865.800	5.115.100	750.700

		Part-%	Unemp-%	Growth-%	Supp-gr
	Higher voc.	83.4	3.3	8.7	9.1
1979	Univ. grads	94.7	3.2	8.7	9.0
	Whole pop. 15-64 yrs	57.9	3.9	0.4	1.2
	Higher voc.	85.4	3.6	5.2	5.4
1981	Univ. grads	95.9	2.7	7.8	7.7
	Whole pop. 15-64 yrs	59.2	8.0	2.3	2.8
	Higher voc.	85.9	6.2	2.7	4.2
1983	Univ. grads	95.0	5.5	6.0	7.2
	Whole pop. 15-64 yrs	60.2	13.5	-1.0	2.1
	Higher voc.	84.9	6.2	7.6	7.6
1985	Univ. grads	94.8	6.2	5.3	5.7
	Whole pop. 15-64 yrs	60.0	12.8	1.4	1.0

Source: Work-force Censuses, CBS

Pt.supp = potential supply. Whole population aged 15 - 65 years
Supp = the potential supply on the labour market minus those unavailable
Demand = number employed
Unemp. = unemployment as shown by the Work-force Censuses [Arbeidskrachtentellingen]
Part-% = percentage participation. Calculated as a quotient of supply and potential supply
Unemp-% = percentage unemployment. Calculated as a quotient of unemployment and supply
Growth-%= annual growth in numbers employed
Supp-gr = annual growth in supply

In 1979, for instance, the annual growth in the number of employed graduates was 8.7%, while in the population as a whole the annual growth in numbers in employment was only 0.4%. Only in the eighties, at the time of the economic recession, was there a discrepancy in the labour market between the annual growth in supply and the annual growth in the number of graduates in employment (demand), a discrepancy which manifested itself in an increase in the percentage unemployed (see table 3.2). In 1985, the proportion of graduates unemployed rose to over 6% (2). This percentage is, however, still considerably below the general level of unemployment over the work-force as a whole, where unemployment amounts to almost 13%.

The growing supply of graduates has indeed, therefore, led to growing unemployment among graduates, but the demand for graduates has also risen.

One of the most important ways of employment-finding, the advertisements in papers and periodicals, has shown an increasing number of jobs for higher personnel in the period 1984-1990 (see table 3.3). Only in the years 1987 and 1988 there was a temporary decline of the number of published vacancies. According to the growth in the number of advertisements, there is a strong demand for technical and automation experts. Almost half of the published vacancies was demanding for these experts.

3.2 The employment situation

In 1988 NIPO (the Netherlands Institute for Public Opinion and Market Research) was commissioned by the Ministry of Education and Science to carry out a survey of over 2000 graduates in all disciplines. This survey gives information about the employment situation of graduates. Table 3.4 and 3.5 show where graduates find work, while tables 3.5 gives information about the kind of work they do.

Most graduates are working in the field of education (31%), for instance as a teacher. Others are working in the service industries (18%). It is especially here, were the growing group of graduates find work. Some of the graduates find work in the industries.

Of course the kind of work graduates do depends particularly on the kind of training they have had. In general those qualified in higher vocational education have had a more practical schooling. This is why employers prefer sometimes those with a higher vocational training, like in the industry.

As table 3.6 shows the kind of work these graduates do, differ from the university graduates.

3.3 Graduate employment opportunities

The ROA - Research Centre for Education and the Labour Market [Researchcentrum voor Onderwijs en Arbeidsmarkt] - has carried out research on the employment prospects for the various different fields of study. The aim of this research was to develop a prognosis of employment prospects for the various fields to serve as an aid in advising future students on courses and choice of career. The prognoses relate to the period from 1985 to 1992, with 1985 serving as the base year.

Table 3.3

The total demand for higher personnel, number of vacancies and indexed (1984 = 100)

	1984	1985	1986	1987	1988	1989	1990
Managerial posts							
absolute	1 151	1 638	1 746	1 568	1 512	1 631	1 632
index	100	142	152	136	131	142	142
Technical experts							
absolute	4 873	7 886	8 010	6 039	6 202	9 513	10 773
index	100	162	164	124	127	195	221
Automation experts							
absolute	3 172	6 012	6 852	5 773	4 641	5 029	5 376
index	100	192	219	185	148	161	172
Marketing and advertising personnel							
absolute	1 339	1 697	1 604	1 399	1 406	1 628	1 643
index	100	127	120	104	105	122	123
Higher sales personnel							
absolute	2 047	2 677	2 876	2 952	2 884	3 379	3 598
index	100	131	141	144	141	165	176
Higher educationalists							
absolute	-	-	-	-	-	2 184	2 327
index	-	-	-	-	-	100	107
Staff and policy posts							
absolute	2 793	3 851	4 097	3 319	3 280	3 671	4 336
index	100	138	147	119	117	131	155
Personnel officers							
absolute	944	1 392	1 366	1 100	1 070	1 241	1 674
index	100	147	145	117	113	131	177
Higher financial and administrative personnel							
absolute	3 148	4 021	4 427	4 053	3 697	3 980	4 808
index	100	128	141	129	117	126	153
TOTAL							
absolute	21 100	31 200	32 300	27 600	26.300	30.625	34.535
index	100	148	153	131	125	145	164

Source: advertisement-registration of VNU Business Publication, Amsterdam.

Table 3.4

The division of graduates to type of employer in 1988, in %

	higher vocational	university	TOTAL
Central government	21	28	24
Local government	13	12	13
Semi state-controlled company	24	19	22
Private company	34	34	34
Other	7	7	7
Total	100	100	100

Table 3.5

The division of graduates in branches of industry in 1988, in %

	higher vocational	university	TOTAL
Education	33	30	31
Health	12	13	13
Association	2	2	2
Industry	11	8	10
Public utility	1	0	1
Building industry	4	1	3
Trade/catering	2	2	2
Transport	2	1	1
Business service industry	8	12	10
Other service industry	8	7	8
Agriculture	1	1	1
Other business	2	1	2
Other public services	3	6	5
Other	10	14	12
No answer	0	1	0

Table 3.6

The profession of graduates in 1988, in %

	higher vocational	university	TOTAL
Education	29	23	26
Research	4	15	9
Management	14	18	16
Expert	16	11	14
Adviser	9	12	10
Accompanying	9	6	8
Other	19	14	17

Since the research is based on current employment and educational data (Work-force censuses, Central Planning Bureau, WORSA and RHOBOS estimates), it can also give some impression of the current labour market situation for graduates.

The ROA has developed an indicator to define labour market prospects. This indicator is based on 3 components, viz.:

1) expected expansion demand
2) expected replacement demand
3) expected potential intake of graduates entering the labour market.

Growth in employment opportunities (expansion demand) is determined on the basis of Central Planning Bureau [Centraal Planbureau] forecasts of the number of people employed per industry. Following on from this, the number of employees is distributed among the various recognized occupational groups. Finally, an employment forecast is made for the various types of education, taking account of any expected changes in the structure of the industries and occupational groups.

Replacement demand is determined by the numbers of (usually older) workers leaving employment as a result of retirement etc. This is determined by forecasting the replacement needs within the various occupational groups. Expected expansion demand plus expected replacement demand equals expected 'job openings'. The new supply is determined by the expected intake of students graduating over the 1985-1992 period. These are estimates (commonly known as WORSA prognoses) made by the Student Estimates Working Party [Taakgroep Studentenramingen] and revised by the ROA of the numbers of students graduating in the various fields of study in the academic years from 1985-1986 to 1991-1992. For the sake of comparison with the demand side of the model, the number of students graduating is expressed here in terms of percentages of the number of persons employed in 1985. Table 3.7 gives the figures calculated by the ROA. The quotient of the potential intake and the job openings produces the result of the prognosis.

Table 3.7

Expansion demand, replacement demand, job openings and potential intake per course in the 1985-1992 period as % of the number of persons employed in 1985

Higher vocational	Expansion demand %	Replacement demand %	Job openings	Intake	Quotient	Qualification employment prospects	GH-coeff.
EDUCATION							
*teacher training	-11	12	1	30	30.00	very poor	0.37
AGRICULTURE							
*Agriculture courses	23	13	36	91	2.53	mediocre	0.91
TECHNOLOGY							
*Laboratory courses	26	13	39	25	0.64	good	0.77
*Technology courses	22	13	35	50	1.43	fair	0.70
HEALTH							
*dietetics etc.	66	12	78	102	1.31	fair	0.55
*nursing, physioth., speech th.	21	11	32	104	3.25	mediocre	0.29
BUSINESS							
*Translators/interpreters courses	-6	13	7	45	6.43	poor	0.85
*Business (exc. admin./ fiscal courses)	36	15	51	35	0.69	good	0.90
*Business (legal and admin. courses)	21	16	37	34	0.92	good	0.88
*Hotel management	62	19	81	68	0.84	good	0.89
BEHAVIOUR & SOCIETY							
*social work, librarianship	-4	11	7	58	8.29	very poor	0.64
LANG. & CULTURE							
*Art/drama/music schools	-21	13	-8	62	-7.75	very poor	0.78

University	Expansion demand %	Replacement demand %	Job openings	Intake	Quotient	Qualification employment prospects	GH-coeff.
AGRICULTURE							
* Agricultural sciences	13	12	25	103	4.12	poor	0.78
NATURAL SCIENCES							
*Maths and sciences	22	12	34	56	1.65	fair	0.66
ENGINEERING							
*Applied sciences	19	11	30	48	1.60	fair	0.88
HEALTH							
* Medicine	21	21	42	45	1.41	fair	0.26
BUSINESS							
*Business, business admin. (drs), informatics	32	13	45	88	1.96	fair	0.86
*Bus. admin. (ir), econometrics, act.	212	12	224	105	0.47	good	0.80
LAW							
*jurisprudence and soc. admin.	9	11	20	95	4.75	poor	0.73
BEHAVIOUR & SOCIETY							
*social sciences	-7	11	4	90	22.50	very poor	0.67
LANG. & CULTURE							
*Literature	13	11	24	121	5.04	poor	0.35
*Theology	-4	15	11	13	1.18	fair	0.48
*Art history	18	12	30	224	7.47	poor	0.65

Since the ROA feels that no undue value should be attached to the precise details of the prognoses, these have been converted into a qualitative description of employment prospects. A high ratio gives a comparatively large intake in relation to demand and therefore indicates a slack labour market for the type of course concerned.

Over the whole field of higher education, employment prospects are poor for most types of courses in the behaviour and society and language and culture sectors. In addition, university graduates are expected to face poor employment prospects for courses in the agriculture and law sectors. Prospects for college graduates from teacher training courses are also frankly poor (3). The ROA notes, however, that specific labour market predictions for primary teacher training indicate good prospects of employment in relation to these courses. Other predictions point to good prospects for the technical and commercial teacher training courses.

Bright job prospects are expected for a number of courses in the business and engineering/technology sectors (see table 3.6), where future expansion demand in particular is expected to be quite considerable. Finally, the table also gives an indication of the labour market flexibility of courses. The Gini-Hirschman coefficient indicates the potential for movement between the courses and the various occupations. A high coefficient indicates wide scope for movement.

The least scope for movement is offered by courses in the health sector. This group of workers are generally employed within specific occupational groups, for example as doctors or dentists, depending on their initial qualifications.

3.4 Graduate salaries

The survey research of the NIPO (see 3.2) included also a question on average gross annual income. Those respondents not wishing to reveal their incomes (some 100 respondents) were excluded from the calculation.

Table 3.8 shows that average gross annual income for university graduates in 1988 was considerably higher than for those qualified in higher vocational education (Dfl.74,250 as against Dfl.54,750 gross per year). The highest gross annual income was earned by university graduates in the business sector. Among college graduates too, those qualified in the business sector earned the highest average gross annual income (Dfl.67,500).

Courses in the business sector probably owe part of their considerable popularity to these high salary levels. De Grip (1974) points out, for example, that labour market considerations play a major role in the choice of business courses by future university students.
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Table 3.8

Average annual incomes of higher vocational and university graduates by sector in 1988

	Higher voc.	University
Education	46.750	--
Agriculture	63.250	70.750
Natural sciences	--	76.750
Technology	65.250	79.500
Health	41.250	92.750
Business	67.500	93.500
Law	--	77.000
Behaviour & society	45.500	60.000
Lang. & culture	45.250	58.000
Other unclassifiable	56.000	78.000
TOTAL	54.750	74.250

Another conspicuous feature is the extremely large salary differentials between college and university graduates in the health sector. A university graduate in the health sector earns an average of more than Dfl. 90,000 gross per annum, while a college graduate earns only Dfl.40,000 gross per annum. These pay differentials can to some extent be explained by ratios between demand and supply in the labour market. Other factors are, however, also involved. In the health sector, college graduates are trained for quite different roles than university graduates. Higher vocational courses are primarily oriented towards the paramedical professions. They include courses for physiotherapists, dietitians, speech therapists, and senior nursing staff. Posts requiring a university training are those of medical specialist, (family) doctor, veterinary surgeon, dentist etc.

In the other sectors, the pay differentials between college and university graduates are less marked. It is even possible for a university graduate to play the same role in the labour market as a college graduate. As a general rule, however, college and university graduates seek work in different segments of the labour market.

It should be noted here that the difference in status between college and university graduates is still wide. Most college graduates have no right to an academic title.

4. THE LABOUR MARKET PROSPECTS

This chapter reviews a number of trends in society who have their impact on employment for graduates.

First we try to explain why the employment for graduates is growing so fast. What are the prospects for graduates? And we describe the existence of cyclical effects on the labour market. In the last three sections we describe some social developments which may affect the (future) relationship between higher education and the labour market. These developments are the demographic trend, the femal emancipation and internationalization.

4.1 Growth of the labour market

The growth in employment can be explained by reference to three factors (Ministry of Education and Science, Ontwerp-HOOP [5-years Plan for Higher Education and Research], 1987). First of all there is a general growth in employment in the Netherlands. In the period 1947-1985 there was an average growth of the labour force of 0,75% yearly. Till the year 1994 they expect an average growth of 1,2% yearly. Then there is a relative growth resulting from changes within sectors. Sectors with a highly qualified labour-force, like the service industries, display a rapid growth in employment. Opportunities as a result of the number of employed graduates will rise faster in percentage terms than the general growth in employment. Just in the business service industry and in other service industries (mostly services offered by the government) was a rapid growth of employment, where especially the graduates took of their advantage. A final development, called as "displacement", means a relative increase in highly qualified posts in relation to posts requiring lower qualifications. They estimate that 50 - 60% of the growth in employment among university graduates over the period from 1947 to 1985 is the result of displacement.

There are two possible reasons for such displacement. On the one hand, economic, social and/or technical developments are creating a demand for the use of highly qualified labour. In this context, reference is often made to the knowledge-hungry and dynamic character of Dutch society, a factor which increases the demand for a highly trained work-force.

On the other hand, a form of displacement which attracts much more attention is the displacement of the less highly trained by the more highly trained. This latter form of displacement occurs particularly where a slack labour market allows employers to drive up educational qualifications. It results in trained people working at a level below that for which they are qualified.

According to the Ministry of Social Affairs and Employment (1989) this form of displacement will particularly occur in the higher commercial jobs.

4.2 Prognoses

Table 4.1 provides an overview of the Central Planning Bureau's most recent estimates of labour market surpluses and shortfalls by category of training (1). Apart from the fact that large surpluses will continue to exist among those educated only to primary or general secondary school level, a tight labour market is predicted at higher education level for those qualified in technological fields. This undoubtedly means real shortfalls for specific subjects within this area. The CPB, however, offers no predictions at a so detailed level.

Table 4.1

Estimated (relative) surpluses (+) and shortfalls (-) in the labour market by category of training (in percentages of labour supply)

	1985	1994	2000
Primary	++	++	++
Advanced elementary			
Gen./Commerc.	+	0	-
Technical	+	+	+
Caring	+	++	+
Secondary			
Junior gen.	++	++	++
Sen. Tech.	+	0	0
Sen. Commerc.	+	+	+
Caring	+	0	-
Higher			
Technical	+	0	0
Commercial	0	0	+
Caring	+	+	+

++ = >15%
+ = 5 à 15%
0 = -5 à +5%
- = -5 à -15%
-- = <-15%?

The Central Planning Bureau recognizes three broad sectors:

- technical = agriculture + science + technology
- commercial = education + health + language and culture + behaviour and society
- caring = economics and law

According to these prognoses there is a growing demand for higher technical employees. The industry observes that there aren't enough qualified engineers. They need especially more practical trained engineers and research workers. Because of the lack of interest for technical studies (especially by women), the government considers to take some measures.

The increasing interest in environmental problems causes also a growth in the demand for general environmentalists (with a four-year college qualification) and for environmentalists with a technical schooling. An expansion of existing courses is necessary, together with a growth of the technical specializations.

4.3 Cyclical effects

In some fields, cycles are said to occur as a result of developments in the labour market, with course and career choices being geared to the (presumed) situation in the labour market. Bureau Bartels B.V. describes such a cycle for an occupation requiring a four-year training course as follows:

"In year 1, when the labour market situation in a particular labour market segment is good, with high salaries and bright employment prospects, media reports etc. will lead many people to choose to train for the occupation concerned. In year 5 an unusually large group will graduate and supply will therefore increase. The shortages will be diminished and the upward pressure on salaries reduced. In due course, the situation will actually be reversed and the courses will become less popular, so that from year 9 onward shortages will once again occur."

The actual occurrence of such cycles depends however on a number of factors. According to Bureau Bartels, it is essential that few opportunities for sideways movement exist for the occupation concerned (little scope for moving into different professions). Bouman adds to this that the occupation's scope for movement into different industries would also have to be slight, and moreover that scope for the displacement of less trained by more highly trained workers would have to be limited.

As a typical example of such a cycle occurring in the labour market, reference is often made to the situation in primary teacher training. Some years ago, the job prospects for people qualified in this area were extremely poor. There was large-scale unemployment and the starting salaries of teachers in primary schools were gradually declining. The result was a greatly reduced intake in this sector. The results of these developments are now emerging and actual shortages of primary school teachers are once again expected in the near future. The Ministry of Education and Science proposed measures to resolve the expected shortfalls.

4.4 Demographic trends

A major development determining the intake into education and supply on the labour market is the future composition of the population of the Netherlands. According to CBS data, the total population is likely to rise by 1.25 million people by the year 2000. This increase will occur, however, to a large extent among people over 65. This phenomenon is sometimes termed the ageing of the Dutch population. That section of the population which influences the labour supply, i.e. the population aged between 16 and 64, is also set to rise over the period mentioned by 0.8 million people. This increase can likewise, however, be ascribed exclusively to an increase in the proportion in the older age groups, especially the 50-64 age bracket.

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Table 4.2

Population trends (as at 1 January) up to the year 2000

	1985		1995		2000	
	abs.	in %	abs.	in %	abs.	in %
0-14 years	2.9	20	2.8	18	2.9	19
15-29 years	3.7	26	3.3	22	3.0	19
30-49 years	4.0	28	4.8	31	4.9	31
50-64 years	2.1	15	2.3	15	2.7	17
65+	1.7	12	2.0	13	2.1	13
TOTAL	14.5	100	15.3	100	15.7	100
15-64 years	9.9	68	10.5	68	10.7	68

Against the background of these demographic trends, thinking about 'human resource management' has again become topical. The ageing population will, after all, mean a smaller proportion of younger workers in the labour process. Rapid social and technological change will necessitate constant updating of the required occupational qualifications. This new expertise and new skills will no longer be ensured by the influx of young, newly trained graduates, and increasing demands will be made of older workers.

Workers in the labour process will all the time have to keep up with new technological developments by means of recurrent education. This calls for a form of personnel and training policy from the employer organization which is sometimes termed 'human resources management'.

4.5 Female emancipation

The level of female participation in the labour market has risen substantially over the last 30 years. Where in 1960 women made up 22% of the work-force, by 1989 the percentage had risen to 39%. The proportion of graduate women has increased particularly rapidly, bringing them into a more equal position with men. In future, the proportion of graduate women is likely to increase further. What consequences will this have for the labour market?

According to Central Planning Bureau data, the proportion of graduate women will rise between 1985 and the year 2000 from almost 11% to 19%, while the proportion of graduate men will increase from 16% to 21%. The proportion of graduate men and the proportion of graduate women in the labour-force are therefore expected to converge.

Changes are also occurring in the labour market itself, probably to some extent connected with the increasing participation of women. The most striking feature is the growing importance of part-time work. The number of part-time jobs increased throughout the eighties and is expected to continue to do so for the foreseeable future, albeit at a rather lower rate (Belderbos e.a., SEO, 1989, p.38).

Secondly, there is a noticeable movement from the industrial to the service occupations. Women prove to be represented more strongly than men in the service industries, viz. commercial services (catering and retail trade), business services and most particularly the public sector. It is in this sector that the growth in the number of part-time jobs and the increasing participation of women in the labour market have been able to occur.

4.6 Internationalisation

Internationalization is a term often used to refer to a number of current trends in higher education and in the labour market. In particular, the creation of a single European market is likely to have major consequences for graduate employment. Recent developments in Eastern Europe will also undoubtedly provide a further boost to the process of internationalization. The emergence of Eastern Europe from its previous isolation and the creation of a market economy in those countries will promote the formation of a single extended European market.

There is great interest in the Netherlands in the internationalization of higher education. New policies are being introduced which internationalize higher education by increasing opportunities to study and teach abroad (the establishment of EC schemes like ERASMUS and COMETT) and by promoting international contacts in the field of research.

An additional factor is that the creation of a single European market is leading businesses in the countries concerned to adopt a more international posture. This means that graduates will have more opportunities to work in other parts of the EC. Once there is international recognition of educational qualifications this development seems inevitable. The consequences for education and the labour market are not yet clear, but it seems certain that the development will promote the international mobility of graduates.

Certain fields of higher education are more likely than others to feel the effects of this process of internationalization. In the short term there is expected to be a growth in demand for lawyers and translators to cope with the harmonization of rules and procedures in the field of international legislation.

5. CONCLUSION

5.1 Higher education: Some facts

The increasing number of students in higher education has drawn attention to a better output. More students should in less time finish their studies. There is a growing interest in improving the pass rate and the quality of higher education. The number of women participating in higher education has increased substantially.

1. One major trend in higher education in the early eighties was the growing popularity of courses in the business sector. Over the whole higher education

system, the proportion of first-year students in this sector increased. Bright job prospects and the growth in the service industries are thought to be contributory causes.

This growth in the business sector was at the expense of the previously popular studies in the humanities and social sciences. The proportion of first-year students in the sector behaviour and society fell from 24% in 1970 to 16% in 1988. At present the interest in a study in this field is again increasing. In some other fields, we found a declining interest, despite the increasing total number of students. In higher vocational education, the proportion of first-year students in the education sector declined spectacularly from 31% in 1975 to only 16% in 1988. Despite all expectations based on social demand, numbers of students entering the technology sector (including the natural sciences) have also fallen.

2. Female interest in higher education courses has increased considerably. This increase in female students has been particularly striking in the case of the universities. The proportion of women among first-year university students rose from 30% in 1975 to 43% in 1988. In higher vocational education, the proportion of women among first-year students increased from 38% in 1975 to 47% in 1988. This increasing female participation in higher education has not, however, led to any change in the traditional pattern of course selection. The ?majority of women continue to opt for the "social" sectors of education, i.e. in the universities for law, behaviour and society, and language and culture, and in higher vocational education for education, health, and behaviour and society. There has, however, been increasing female interest in business courses.

3. Part-time courses are more usual in college than university education. In 1989, around 23% of first-year students in higher vocational education and 7% of first-year students in universities were on part-time courses. The number of part-time university students is increasing. The most popular course among part-time university students is law. In higher vocational education, it is the social work and business courses that are especially popular. Part-time secondary teacher-training courses are attracting less interest than previously, although the number of part-time students is still greatest in this sector.

4. The official length of courses in university and higher vocational education is generally identical, that is 4 years. The actual time taken by students to graduate from university courses, however, is considerably greater than the official course length. On average, university students take around 6 years to graduate, while in higher vocational education the average duration of study is around 4.3 years. Before the introduction of the University Education Act in 1982, most students in the universities study for more than seven years. A proportion of the students commencing higher education courses will not complete them. Estimates of the average pass rate suggest a pass rate of 60% for higher vocational courses and 71% for the universities. Part-time education has a rather lower pass rate.

5. The trends in the numbers of students graduating more or less parallel those in students entering higher education. In the universities there has been a marked increase in numbers graduating in the language and culture and behaviour and society sectors. In particular, man women (60% of female graduates

in 1987) gain their qualification in one of these two sectors. In higher vocational education, the number of graduates in the business sector has increased markedly. This has been accompanied by a decrease in the proportion of graduates in the education sector. The numbers graduating in agriculture, science and engineering have by contrast remained fairly constant, despite of the increasing demand on the labour market of engineers and technologists.

5.2 The labour market: some facts

Although there was a slight increase in graduate employment untill 1985, the unemployment is still lower among graduates than among the work force as a whole. It seems that despite the growing number of graduates, the labour market can absorb them reasonably well.

1. Especially in the eighties, the growing supply of graduates has led to increasing graduate unemployment. Numbers seeking work peaked in 1985, with both the absolute number and the number relative to all graduates at their highest points in that year. Since then the situation has to some extent stabilized. Unemployment is not a problem in every sector of higher education. The statistics show that it is particularly in the behaviour and society and ?language and culture sectors that many graduates are registered as unemployed with the local employment exchanges. Among graduates from higher vocational education, those qualified in education are more often unemployed, and among university graduates those with qualifications in agriculture. The duration of unemployment varies as between higher vocational and university education, and from one sector to another. In those sectors where the numbers unemployed are great, job-seekers tend also to remain unemployed for longer. Of those registered unemployed, one-fifth of college graduates and one-third of university graduates have been seeking work for over 2 years.

2. The growing supply of graduates has given rise to an accompanying increase in demand for graduates. In 1985 employment opportunities increased for college graduates by 7,6% and for university graduates by 5,3%, while for the whole work force the annual growth in numbers at work was only 1.4%. It was mostly in the service industries, viz. commercial services (catering and retail trade); business services and in the public sector, where the growth of employment was concentrated.

What then are the employment prospects for graduates? This is not an easy question to answer. Much depends on the initial course taken. According to the ROA, graduate job prospects are poor for courses in the behaviour and society, language and culture and agriculture sectors. This is true both for higher vocational and university courses. Still, most graduates found work in the field of education, mostly as a teacher. It was here that cyclical effects appeared. Some years ago, the job prospects qualified in this area were extremely poor, especially for primary school teachers. The employment was declining. Nowadays we need more teachers, especially for the primary schools and teachers in the sciences.

In the eighties, most jobs are offered (according to the advertisements) for technical and automation experts.

3. Not surprisingly, salaries are also relatively low for those qualified in sectors with poor prospects of employment. Of all graduates, those qualified in the behaviour and society and language and culture sectors earn least. College graduates in the education and health sectors also earn relatively little. Their low average annual income is caused not only by the relationship between supply and demand in the labour market, but also by the fact that these graduates are generally employed in the public sector.

5.3 Higher education and the labour market: the general trend

1. The chances of a graduate finding suitable employment do, however, vary considerable between the various sectors of higher education. The in the seventies popular fields as behaviour and society and language and culture have found in the eighties problems with the employment of their graduates. High unemployment, poor employment prospects and low salaries are signs of a bad function of the labour market. On the other hand they expect in the nineties a growing demand for those qualified in technological fields. However, the numbers entering the engineering (technology) sector have not risen to any appreciable extent.

Nowadays the government tries to reach a changing attitude for sciences. The choice for a study has to be reorganized, so that it better corresponds to the way the economy and the employment situation develops. So more students should opt for courses in technology.?

Especially women are stimulated to choose for scientific and technical courses. But despite some publicity campaigns and the growing numbers of female students there is no shift appeared, on the characteristics of the entering in higher education. Their specific course preferences are still virtually confined to what are called the "social" sectors of education.

2. In general there are some trends in society who have their impact on the relationship between higher education and the labour market.

First there is a demographic trend, the fact of an increasingly ageing population, which will have consequences for the education-labour market interface in the Netherlands. In particular there is likely to be a growing demand in the labour market for retraining, refresher and inservice courses for employees.

Also there will be an increasing participation of women on the labour market. So the numer of part-time jobs will increase, especially in the service industries, they expect.

3. The consequences of the single European market in 1992 are not yet clear. What is certain is that both higher education and the labour market will adopt a more international posture.

Notes and bibliography

NOTES

Chapter 1.

1. *The Ministry of Education and Science publishes yearly estimates of expected trends in student numbers in higher education (for the universities these are known as WORSA estimates and for higher vocational education as RHOBOS estimates).*
2. *The qualifications required are in principle a pass at one of the three highest levels of secondary education - senior general secondary (HAVO), senior secondary vocational (MBO) or pre-university (VWO) - for admission to higher vocational education, or at pre-university level (VWO) for admission to university.*
3. *Part-time courses at higher education level can also be followed with the Open University. This largely government-funded institution was launched in 1984 and by 1988 had over 13,240 students. Teaching is mainly by correspondence. Since it is also possible to obtain partial qualifications, only a proportion of the students enrolled are likely to complete a full course of higher education.*
4. *Recent plans have been made to reduce the period of entittlement to financial assistance restricted to five years.*

Chapter 2.

1. *According to the Labour Force Survey 1990, unemployment in the Netherlands in 1990 stood at 6% for graduates and 8% for the labour force as a whole.*
2. *H. Detman and B. Dekker, Het werkloosheidscijfer nader onderzocht (Total unemployment examined further), Netherlands Ministry for Social Affairs and Employment, The Hague, 1987.*
3. *Netherlands Ministry of Education and Science, Ontwerp-HOOP, Proeven en achtergronden (Draft Higher Education and Research Plan, Tests and Background), 1987, p.29 ff.*

Chapter 3.

1. *See also J.W. van Dam and M. Mortier, Inventarisatie van arbeidsmarkt-onderzoeken onder afgestudeerden van het HBO (Taking stock of labour market surveys of graduates from higher vocational education), ROA, 1990.*
2. *This is the percentage unemployed as shown by the CBS Manpower Census of 1985. For reasons given in section 2.1, this percentage varies from those mentioned earlier (see table 2.3).*
3. *The most recent prognosis of employment prospects by the ROA (during the period up to 1994) describes the prospects of teacher training graduates as fair. Another important change is that the employment prospects of graduates of social or cultural courses in higher vocational education have changed from poor to fair.*

Chapter 4.

1. *CPB, Arbeidsaanbod en werkgelegenheid naar 11 opleidingscategorieën 1985-2000; een actualisering van werkdocument 17 (Labour supply and employment opportunities for 11 categories of qualifications 1985-2000, an update of working paper 17), 1989.*

BIBLIOGRAPHY

Allaart, P.C., R. Kunnen and H.A. van Stiphout, Trendrapport Arbeidsmarkt 1989 [Report on trends in the labour market], OSA preparatory study no. V 32, May 1989

Beelderbos, R.A. and C.N. Teulings, De arbeidsmarkt tot 1994 [The labour market up to 1994], SEO, Amsterdam, Sept. 1989

Berg van Saparoea, F.W. van den, Jurist en arbeidsmarkt (Lawyers and the labour market), SCO report 184, Dec. 1988

Bouman, A., Varkenscycli op de arbeidsmarkt [Cycles in the labour market], in: Economisch Statistische Berichten, 23 August 1989

Bureau Bartels B.V., Hollen of stilstaan, wisselingen in arbeidsmarkt-discrepanties in de jaren '80 [All or nothing, variations in labour market discrepancies in the eighties], OSA preparatory study no. V 29, Feb. 1989

Central Bureau of Statistics (CBS), Studieresultaten en vertrek van studenten in het wetenschappelijk onderwijs, cohort 1983/84 [Student pass and drop-out rates in universities, 1983/84 cohort], in: Mededelingen CBS no. 7904, Aug. 1990

Central Planning Office (CPB), De arbeidsmarkt naar opleidingscategories 1975-2000 [The labour market by categories of qualifications 1975-2000], The Hague, 1987

Central Planning Office (CPB), Arbeidsaanbod en werkgelegenheid naar 11 opleidingscategorieën 1985-2000, een actualisering van werkdocument 17 [Labour supply and employment opportunities for 11 categories of qualifications 1985-2000, an update of working paper 17], CPB, 1989

Coppens, I. and M. Tupan-Wenno, Werkloosheidscijfers hoger opgeleiden [Graduate unemployment statistics], Netherlands Ministry of Education and Science, HW/T-verkenning no. 41, April 1990

Dam, J.W. van and M. Mortier, Inventarisatie van het HBO [Taking stock of higher vocational education], ROA, Maastricht, 1990

Detman, H. and B. Dekker, Het werkloosheidscijfer nader onderzocht [Total unemployment examined further], Netherlands Ministry for Social Affairs and Employment, The Hague, 1987

Donk, J.A.C. van de, De in- en uitstroom van het hoger onderwijs 1990-2010 [Numbers entering and leaving higher education 1990-2010], Netherlands Ministry of Education and Science, HW/T-verkenning no. 36, May 1989

Grip, A. de, J.A.M. Heijke, R.J.P. Dekker, De arbeidsmarkt naar opleiding en beroep in 1992 [The labour market by qualification and occupation in 1992], ROA, 1989

Grip, A. de, J.A.M. Heijke, R.J.P. Dekker, De arbeidsmarkt naar opleiding [The labour market by qualification] in: Economisch Statistische Berichten, 9 May 1990, p. 428 ff.

Helvert, J.J.G.J. van, Enquête schoolverlaters [Survey of school leavers], NIRIA, Amerongen, 1989

Huijgen, F., De kwalitatieve structuur van de werkgelegenheid in Nederland [The qualitative structure of employment in the Netherlands], Part III, OSA preparatory study no. V 33, July 1989

Janssen, J.E.M.B., De markt van kennis [The knowledge market], Netherlands Ministry of Education and Science, HW/T-verkenning no. 39, Dec. 1989

Jong, U. de and J. Roeleveld, Studieuitval van studenten in het Hoger Onderwijs [Student drop-out in higher education], SCO, Amsterdam, July 1990

Kolkhuis Tanke, P. and A. Vissers, Hoger opgeleiden in de sectoren economie en techniek [Graduates in the economics and engineering and technology sectors], Netherlands Ministry of Education and Science, Feb. 1990

Netherlands Institute of Economics (NEI), Behoefte aan kennis op milieugebied, een verkenning van de arbeidsmarkt voor milieudeskundigen [Demand for environmental knowledge, a survey of the labour market for environmental experts], Rotterdam, Jan. 1988

Netherlands Ministry of Education and Science, Ontwerp HOOP 1990 [Draft Higher Education and Research Plan], The Hague, Sept. 1989

Netherlands Ministry of Education and Science, Ontwerp HOOP, Proeven en achtergronden [Draft Higher Education and Research Plan, Tests and background], The Hague, Sept. 1987

Netherlands Ministry of Education and Science, Ontwerp HOOP 1990, Feiten en Cijfers [Draft Higher Education and Research Plan 1990, Facts and Figures] The Hague, Sept. 1989

Netherlands Ministry for Social Affairs and Employment Rapportage arbeidsmarkt 1989 [Report on the Labour Market 1989] Sept. 1989

Netherlands Ministry of Education and Science, Het leraarschap en de lerarenopleidingen [The teaching profession and teacher training courses], letter from the Services Division of the Ministry to the Speaker of the Lower House of Parliament, Feb. 1990

NIPO (Netherlands Institute for Public Opinion Survey and Market Research), Onderzoek hoger opgeleiden [Graduate survey], Amsterdam, 1988

Taakgroep Studentenramingen, HO-raming 1990, deel I (WORSA) en deel II (RHOBOS) [Student Estimates Working Party, Higher Education Estimates 1990, Part I (WORSA) and Part II (RHOBOS)], Netherlands Ministry of Education and Science, June 1990

Tupan-Wenno, M.O. and J.E.M.B. Janssen, Participation of Women in Higher Education, Netherlands Ministry of Education and Science, Policy Research Department, Dec. 1989

Velden, R. van der, P. Edelenbos and T. Mensen, Letteren en arbeidsmarkt [The arts and employment], RION, Dec. 1989

STATISTICAL ANNEX

Appendix I: New Entrants

TABLE 1

Numbers of female first-year students per sector in university education, total

	1970(1)	1975	1980	1985	1988	1990(2)
Agriculture	531	1 010	1 072	994	1 023	1 082
Natural sciences	2 821	2 896	2 928	3 368	3 722	2 483
Engineering	3 355	2 654	3 351	3 899	5 121	5 972
Health	2 394	2 403	2 655	2 318	2 536	2 292
Business	2 238	1 803	2 416	3 912	5 839	6 151
Law	3 156	2 969	4 341	4 763	5 642	5 743
Behaviour & society	5 421	4 681	5 161	5 048	5 489	7 303
Lang & culture	2 394	4 367	4 972	5 227	5 937	6 784
TOTAL	22 310	22 783	26 896	29 529	35 309	37 810

TABLE 2

Numbers of female first-year students per sector in university education

	1970	1975	1980	1985	1988	1990
Agriculture	103	246	350	399	434	519
Natural sciences	444	503	587	768	927	750
Engineering	119	102	190	396	667	853
Health	629	671	954	1 261	1 542	1 410
Business	77	125	274	768	1 443	1 511
Law	603	950	1 672	2 180	2 792	2 955
Behaviour & society	1 913	2 152	2 625	2 977	3 235	4 474
Lang & culture	924	2 149	2 643	3 231	4 000	4 671
TOTAL	4 812	6 898	9 295	11 980	15 040	17 143

TABLE 3

Numbers of first-year students per sector in full-time higher vocational education, total

	1975	1980	1985	1988	1990
Education	14 262	8 898	7 264	8 297	11 017
Agriculture	1 642	1 926	2 070	2 020	
Technology	14 787	14 935	10 361	13 054	14 200
Health	3 872	5 497	4 869	5 447	4 987
Business	3 837	7 768	11 997	15 021	17 931
Behaviour & society	4 130	5 675	3 559	5 070	6 242
Lang & culture	3 219	3 445	4 039	4 499	4 846
TOTAL	45 797	48 345	44 159	53 408	59 223

TABLE 4

Numbers of female first-year students per sector in full-time higher vocational education

	1975	1980	1985	1988
Education	7 324	5 247	5 007	5 788
Agriculture	228	368	450	489
Technology	1 864	2 136	1 294	1 779
Health	2 583	3 791	3 649	4 323
Business	1 047	2 497	4 805	6 316
Behaviour & society	2 559	3 716	2 636	3 774
Lang & culture	1 660	1 852	2 273	2 588
TOTAL	17 291	19 735	20 114	25 057

TABLE 5

Numbers of first-year students per sector in part-time higher vocational education, total

	1975	1980	1985	1988	1990
Education	8 369	7 653	6 245	5 257	4 444
Agriculture	98	191	-	-	-
Technology	1 108	1 363	1 111	1 496	1 609
Health	1 172	1 753	2 084	1 900	2 694
Business		714	1 932	3 233	3 040
Behaviour & society	2 681	3 100	4 226	3 545	3 568
Lang & culture	2 037	1 363	1 260	1 078	841
TOTAL	15 465	16 189	16 858	16 509	16 196

TABLE 6

Numbers of female first-year students per sector in part-time higher vocational education

	1975	1980	1985	1988
Education	3 184	3 652	2 926	2 678
Agriculture	22	13	-	-
Technology	161	189	198	260
Health	801	1 064	1 362	1 287
Business	-	116	587	1 059
Behaviour & society	1 162	1 570	2 487	2 222
Lang & culture	530	625	682	610
TOTAL	5 860	7 267	8 242	8 116

Appendix II: Enrolments

TABLE 1

Numbers of students enrolled per sector in university education, total

	1975	1980	1985	1988	1990
Agriculture	4 043	5 428	6 369	5 740	6 364
Natural sciences	15 050	16 559	17 670	16 618	12 016
Engineering	15 262	16 683	19 594	20 620	26 028
Health	16 628	17 802	18 151	13 407	12 069
Business	10 390	12 874	17 851	23 457	26 878
Law	15 161	20 865	28 000	28 969	29 368
Behaviour & society	26 192	30 290	29 910	27 691	31 420
Lang & culture	17 498	27 380	29 010	27 772	28 769
TOTAL	120 224	147 881	166 555	164 274	172 912

TABLE 2

Numbers of female students enrolled per sector in university education

	1975	1980	1985	1988	1990
Agriculture	988	1 462	2 172	2 293	2 687
Natural sciences	2 462	3 070	3 731	3 908	3 340
Engineering	510	828	1 614	2 361	3 269
Health	4 069	5 307	7 483	6 989	6 961
Business	455	1 006	2 452	4 816	5 985
Law	3 699	6 731	11 436	13 124	13 951
Behaviour & society	10 225	14 116	15 972	15 822	18 752
Lang & culture	7 593	13 318	16 415	17 345	18 792
TOTAL	30 001	45 838	61 275	66 658	73 737

TABLE 3

Numbers of students enrolled per sector in full-time higher vocational education, total

	1975	1980	1985	1988	1990
Education	40 520	32 228	25 133	27 075	30 765
Agriculture	3 437	4 979	6 711	7 632	-
Technology	29 063	33 888	37 158	42 034	47 089
Health	10 894	16 020	18 951	19 049	17 972
Business	8 172	16 695	30 820	40 377	53 331
Behaviour & society	11 850	17 136	13 530	13 982	16 784
Lang & culture	10 778	13 141	16 060	16 508	17 060
TOTAL	114 762	134 379	148 363	166 657	183 001

TABLE 4

Numbers of female students enrolled per sector in full-time higher vocational education

	1975	1980	1985	1988
Education	19 925	17 535	15 742	18 205
Agriculture	427	811	1 472	1 768
Technology	3 012	3 632	4 243	5 227
Health	7 075	10 917	14 309	14 735
Business	2254	5 384	12 186	16 902
Behaviour & society	7 007	11 468	10 008	10 578
Lang & culture	4 887	6 702	8 908	9 297
TOTAL	44 613	56 639	66 868	76 712

Appendix III: Graduates

TABLE 1

Annual number of graduates per sector in university education, total

	1970	1975	1980	1985	1988
Agriculture	200	349	382	600	1 659
Natural sciences	1 046	1 164	1 318	2 023	2 658
Engineering	1 223	1 651	1 486	2 200	2 615
Health	1 390	1 553	1 909	2 878	2 208
Business	711	837	809	1 232	2 423
Law	1 037	1 412	1 539	2 784	3 514
Behaviour & society	935	1 856	2 345	3 490	4 933
Lang & culture	717	860	1 358	2 627	4 751
TOTAL	7 259	9 682	11 146	17 834	24 761

TABLE 2

Annual number of female graduates per sector in university education

	1970	1975	1980	1985	1988
Agriculture	21	66	92	169	539
Natural sciences	115	164	214	385	577
Engineering	15	27	57	175	243
Health	253	370	537	1 086	1 049
Business	6	18	42	91	373
Law	228	303	451	1 006	1 491
Behaviour & society	219	617	998	1 759	2 648
Lang & culture	210	325	615	1 363	2 691
TOTAL	1 067	1 890	3 006	6 034	9 611

TABLE 3

Annual number of graduates per sector in full-time higher vocational education, total

	1975	1980	1985	1988
Education	8 104	7 477	5 348	4 128
Agriculture	567	944	1 021	1 386
Technology	4 884	6 047	6 574	7 106
Health	1 877	2 900	3 446	3 961
Business	1 415	2 457	5 003	5 555
Behaviour & society	1 585	2 840	2 955	2 362
Lang & culture	1 339	1 776	2 036	2 305
TOTAL	20 153	25 253	26 383	26 803

TABLE 4

Annual number of female graduates per sector in higher vocational education (full-time)

	1975	1980	1985	1988
Education	4 265	4 214	3 287	2 750
Agriculture	41	121	165	321
Technology	795	895	724	891
Health	1 326	2 074	2 595	3 080
Business	404	896	2 021	2 239
Behaviour & society	921	1 894	2 174	1 799
Lang & culture	603	815	1 124	1 285
TOTAL	8 522	11 311	12 090	12 365

TABLE 5

Annual number of graduates per sector in higher vocational education (part-time), total

	1975	1980	1985	1988
Education	4 509	2 698	3 474	3 351
Agriculture	62	155	-	-
Technology	583	489	662	419
Health	873	1 370	1 661	1 709
Business	-	38	390	698
Behaviour & society	1 784	2 555	3 733	2 525
Lang & culture	334	432	454	457
TOTAL	8 145	7 751	10 374	9 159

TABLE 6

Annual number of female graduates per sector in higher vocational education (part-time)

	1975	1980	1985	1988
Education	1 115	1 265	1 458	1 596
Agriculture	6	10	-	-
Technology	93	50	115	61
Health	595	800	1 083	1 154
Business	-	22	83	223
Behaviour & society	582	1 078	2 022	1 467
Lang & culture	73	143	226	274
TOTAL	2 464	3 381	4 987	4 775

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Un rapport de synthèse, qui paraîtra ultérieurement, analyse ces informations, s'efforce d'en dégager les lignes de force et de préciser les défis posés par les années 90.

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